



### THE GRECIAN HOUSE AS DESCRIBED BY VITRUVIUS. BY MR. FALKENER.

Read at the General Meeting, Monday 20th November 1893; and, with the illustrations, registered at Stationers' Hall as the property of the Royal Institute.

The President, J. Macvicar Anderson, in the Chair.

MR. PRESIDENT AND GENTLEMEN,—

**Y**OUR Council have done me the honour to ask me to give you a Paper on a Pompeian house; but, Pompeii being a Roman province, and Vitruvius telling us that the Roman house had a Tuscan or Etrurian atrium, and that the atrium itself derived its name from an Etruscan city, it appeared to me that it was desirable in the first place to consider whence Pompeii derived its architecture; and I think it will appear, from the observations I venture to offer you, that the Roman house had its origin from Greece, and not from Etruria. I am the more desirous of offering you a Paper on this subject, in consequence of my opinion having been reported at your Meeting on the 19th of December 1892, that the hypæthron of Greek temples was derived from the hypæthral opening of their houses—presuming that such openings in the roof corresponded with the compluvia of Roman houses; and consequently, notwithstanding that Vitruvius says that the Greeks had no atria, I feel myself bound to show that houses in Greece had such openings in their roofs, and that the Romans copied them in the compluvium and impluvium of their atria.

As Pompeii furnishes the most perfect and indeed the only examples of the Roman house as described by Vitruvius, I will begin by showing the Greek origin of Pompeii and the other maritime cities of the Campania; and then compare the Roman with the Grecian house.

POMPEII was situated in the centre of the Crater, or Bay of Naples, so called because it is a deeply indented opening, like a *cup*, which must at one time have been even more strongly marked when the islands on each side, Capri and Ischia, formed part of the mainland. This small bay was celebrated in all ages for its beauty and loveliness, its delicious and balmy air, the amenity of its climate, its hot springs, and for the fertility of its volcanic soil. It was resorted to both for health and pleasure. It was a Grecian colony, being part of the Campania, in the centre of Magna Græcia. The Greeks were succeeded by the Romans after the Carthaginian war; and thus we find that the whole coast bears evidence of Greek civilisation and of Roman magnificence.

Looking from Pompeii to the north, we see in imagination the city of HERCULANEUM, with its temples, basilica, theatre, and other monuments, and with houses said to be larger than those of Pompeii. NEAPOLIS (Naples), colonised by Athenians and Chalcidians after Palæopolis had been forsaken, and which, Strabo tells us, still retained, after being conquered by the Romans, its gymnastic and quinquennial games, with contests of music and gymnastic

exercises after the Greek manner, and still preserved its *phratries*, or divisions. This city, from its continued Greek civilisation, attracted the upper classes of Rome, up to the close of the Republic, for the cultivation of literature and refinement, being called "*the Greek city*," and "*Docta Parthenope*"—a proof that it still kept up its intercourse with Athens; while the Emperors afterwards paid it the compliment of presiding over its public games, instituted in honour of the Siren whose body was found on its shore. Suetonius tells us that on one occasion Nero, posing himself as a conqueror, caused a portion of the city wall to be broken down, in order that he might have a triumphal entry. PUTEOLI, taking its name from its wells and mineral springs, its baths and its solfataras; having a pharos and a harbour, where St. Paul landed; celebrated for its commerce, its temples, and its amphitheatre half as large again as that of Pompeii; and where Cicero and Lucullus had famous villas. Close to Puteoli was the Lacus Lucrinus, which Augustus connected with the sea. It disappeared in a violent earthquake in 1538, and a volcanic mountain rose up in its place, 1,000 feet high, and four miles in circumference. MISENUM, which took its name from Misenus, the companion of Æneas, who was buried there; with its spacious harbour where the Romans kept their fleet; where we see one of the villas of Lucullus, which had formerly belonged to Marius, if not built by him, and was even then considered to be a luxurious villa, being bought for a sum equivalent to £2,500. Lucullus, who bought it, enlarged it at great expense, and embellished it with the riches of Asia and the arts of Greece, increasing its value to £80,000. It had shady walks and delicious gardens, rivalling those of the Imperial palaces. Being at the top of the promontory overlooking the Tuscan Sea towards Sicily, it had natural defences, which were subsequently further strengthened, so as to be called a castle; and it was here that the last Emperor, Augustulus, was confined by Odoacer. Lucullus had so many villas that he said he changed his residence according to the seasons, like the cranes and storks. Cornelia, the mother of the Gracchi, those precious babes who afterwards effected a revolution in the land, also had a villa here. Opposite, deriving its name from the nurse of Æneas, who died there, is the little island of PROCHITA; which was resorted to by the Neapolitans, and famous for the Greek dances the maidens of the island celebrated annually—probably the *Romaica* of the Grecian Archipelago, described in the *Iliad* [xviii. 590], or such as Virgil describes [*Æn.* i. 498], in glades of myrtle, laurel, olive and bamboo, on the banks of the regatized Eurotas; or which Diana led on the heights of Cynthus in Delos—a dance beginning in slow but graceful movements, to the cadence of soft music, and terminating in rapid evolutions; the Queen of Beauty leading, followed by youths and maidens imitating her every action—now in separate lines, and now hand in hand; now holding a dart, and now a garland of flowers; now encircling her, bending on one knee, and then, as she breaks through, following again in mystic mazes, till they disappear behind a grove of olive trees; while the notes of the cithara, lyra, and tibia becoming fainter and fainter, lead us to imagine that they are dancing there still. ÆNARIA (now Ischia) comes next, taking its name from Æneas, who was there for some time, and which, from the numerous votive offerings and bas-reliefs found there (now in the Museo Borbonico), and which had been placed in its thermal baths, prove it to have been a great health-resort. Behind Misenum, but close to it, is BALE, founded by Baius, the companion of Ulysses, celebrated for its great luxury and voluptuousness, as described by Propertius, Petronius, and Martial; with its numerous villas. In one of these, belonging to Hortensius, 10,000 amphoræ of Chian wine were found in the cellars after his death. Close to this is CUMÆ, founded by Cumæus of Æolia before the Trojan war, the most ancient city of Magna Græcia, and the seat of ancient civilisation, flourishing 750-500 B.C.; and where Varro, Seneca, Petronius, and Cicero had villas. Near Cumæ was LITERNUM, where Scipio Africanus had a villa. I picked up one of his family signets, which

had lost its setting, in his family tomb at Rome, though he himself was buried here. Beyond this was VULTURNUM, where Domitian built a magnificent bridge.

To the south of Pompeii, or the other side, was STABIE (Castellamare), destroyed, like Pompeii, by Vesuvius, though four miles more distant. Among its ruins is a villa in which a marble satyr was discovered in the fountain of an impluvium, and which had a peristyle with a double row of columns all round, said to have been two hundred in number. Beyond this was SURRENTUM (Sorrento), which looks so beautiful from Pompeii; famous for its wine—which, being rather acid, was recommended by physicians—and for its pottery; and was much resorted to for its beautiful aspect, having the whole Bay of Naples in view, with Vesuvius towering behind. Pollius Felix had a villa here. Close to it were the SIRENUSÆ, three small rocky islets of the Sirens, who are supposed to have given their name to Surrentum. Near Surrentum is a large piscina, still holding water; and adjoining is the PROMONTORIUM MINERVÆ, on the summit of which was a temple of the goddess, founded by Ulysses, and forming a prominent object both from Neapolis and Pæstum. Opposite is the island of CAPRÆÆ, connected with the memory of Tiberius and his twelve villas. It forms two hills, with a valley between: the further one of which is Ana-capri. I toiled up there in the month of August 1847 in company with Mr. Lockyer, a late member of the Institute, whom some of the older members may recollect, and he abused me all the way up for taking him there in such a broiling sun; but when he reached the top and looked down a sheer precipice of 1,600 feet, his astonishment—being unprepared for it—was so great, that he could only exclaim—"Falkener, forgive me!"

Think of all these cities in a small bay sixteen miles across, so close together that they seemed almost touching; and the intervening spaces filled with noble and magnificent villas, stately monuments, and lofty temples—indeed, Strabo speaks of the bay as "one continued city"—here encroaching on the sea, and there rising on the hills like an amphitheatre; the whole, backed with its cedars and olive trees, forming a view unsurpassed by anything seen elsewhere; and sparkling in the sun, as if the bay were lined with gems; or as a beach lit up with phosphorus by the gentle ripple of a sea becalmed for many days; or, as we read in the *Odyssey*, as the splendid palace of Menelaus at Sparta, "glistening like the sun and moon, as one approached it;" or as the palace of Alcinous, which "glistened with the clearness of the moon, and the splendour of the sun;" while we may form some idea of the importance, riches, and grandeur of these cities of the Campania, from its chief city Capua, the amphitheatre of which exceeded in diameter that of the Colosseum at Rome, and which employed 40,000 gladiators—not extraordinary when we consider that the games sometimes lasted four days in succession: Nero's games lasted a hundred days.

I have been trespassing on your time in thus giving you this cursory view of the cities of the Bay of Naples, in order to show their Grecian origin, the effects of which lasted, as we have seen in the instance of Neapolis, long after they came in subjection to the Roman Republic. Indeed, the Greek language was predominant in Southern Italy till after the fall of the Western Empire; and the libraries consisted chiefly of Greek books. Cicero, in his Tusculan Disputations, says all their learning came from Greece; Dionysius of Halicarnassus more than once says that even Rome appeared to have been founded by the Greeks; Livy speaks of all the coast as being possessed by the Greeks; and Tacitus says that Nero loved Naples for the purity of its Greek. Of the manuscripts found in Herculaneum, the greater part are in Greek. After the Imperial conquests in the East—in Asia, Greece, Egypt, and Sicily: Alexandria alone paying a tribute of two and a half up to six millions sterling—Italy was again resorted to by the Greeks: this time by a constant immigration of exiles and impoverished citizens, consisting of painters, sculptors, architects, poets, philosophers, and others, through

whom its Greek taste, elegance, and refinement were revived, and rendered evident by the comparative purity of taste still exhibited in its public buildings and private houses; and in the paintings, sculpture, ornaments, and furniture with which they were filled and embellished.

It is with these houses that we are now concerned. Judging from the antiquity of Etruria as compared with Rome, Vitruvius and Varro complacently imagined that the Roman house was a general development of the Etruscan house; and thought they found a confirmation of such theory in the circumstance that the name Atrium is similar to that of Atria, or Adria, which gave its name to the Adriatic Sea. But if it were of Etruscan origin, why should it take a name from a city on the northern frontier, instead of from the country itself, or the central capital of the country—from the Adriatic sea, instead of the Tuscan sea? This supposed derivation is evidently an accidental guess from the similarity of name; just as Servius libellously derives it from the supposed smoke of an atrium, saying—"Atrum enim erat ex fumo;" and as Festus fantastically argues—because it rose from the ground—"quia a terra oriatur:" for they might with equal plausibility have stated—because it was invented by Atreus, the father of Agamemnon. There are no ruins of an Etruscan house. Neither do any of the Etruscan tombs show resemblance to a Roman house as described by Vitruvius. It is true, the names of Atrium, Alæ, and Tablinum are sometimes given to different portions of these tombs: but with about as much "rhyme and reason" as stalactite caves are entitled to the fanciful names so capriciously bestowed on them, in order to obtain admirers. The only Etruscan monument approaching to a house is the cinerary urn found at Chiusi, the ancient Clusium; which has an external *petasus*, or projecting roof on all four sides; and apparently four doors, and an hypæthral opening at the top: this is all; but the sinking at the top may have been for the insertion of sculpture. If, however, archæologists insist upon its being the representation of a house or temple, then the sinking at the top must prove it to be the *opaion*, or hypæthral opening of the roof. From what we have seen, however, and from what we shall presently state, it is far more probable that the vertical opening in the roof of the Roman Atrium was derived from Greece. Fortunately, Vitruvius gives us descriptions of a Roman house and of a Grecian house. Let us examine them.

#### VITRUVIUS'S DESCRIPTION OF A ROMAN HOUSE.

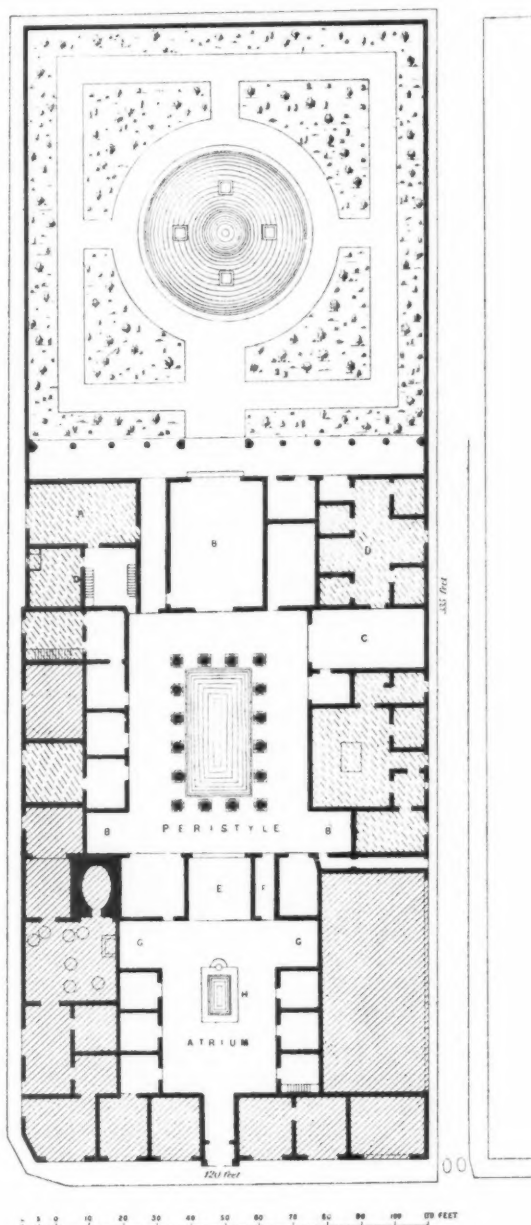
He begins by mentioning the different kinds of Cavædia, using this name conjointly and indifferently with that of Atrium; calling it sometimes by the one, and sometimes by the other; the former corresponding with its character in the pristine house, where it was the central, or, as we should say, the common room; and the latter when it had obtained a greater dignity. "The Cavædia [he says] are of five kinds—the Tuscan, the Tetrastyle, the Corinthian—(according as they had no columns, four columns, or many columns; but all having a compluvium); the Displuviatum (when the rain was diverted from the compluvium); and "the Testudinatum," in which there was neither compluvium nor impluvium. All these are represented in paintings in Pompeii. He then gives the names of the different portions of the house, and the proportions of the rooms—the Atrium, the Alæ, the Tablinum, the Peristyle, and the principal rooms; and in speaking of the alæ he fortunately tells us that the height of the images is to be in proportion to the width of the alæ; thus accidentally informing us of the use made of one of the alæ, which, however, we will not here speak of.

He then says: "In private houses a portion has to be provided for the family, and a portion for the public. The rooms for the family are the cubicula, the triclinia, the baths, and such like: while those open to the public are the vestibulum, the cava-ædium, and [he adds] the peristyle; [but this must be a mistake, as the triclinia, baths, &c., which he says "are private, are connected with the peristyle]. People of ordinary means, however, do not



“require magnificent vestibula, atria, or tablina; for they cannot make use of them, as such persons have to pay their court to those who, possessing such houses (and the means of keeping them up), are able to bestow favours on those who come to ask for them. Those who have to dispose of the fruit of their lands must provide stalls and shops in their vestibula, with vaults and cellars constructed underneath. Nobles, however, and those in authority and honour, having to render service to the citizens, require royal vestibula, lofty atria, and spacious peristyles; with plantations and open walks, befitting the grandeur of the house. In addition to these there must be bibliothecæ, pinacothecæ, basilicæ, scarcely wanting in magnificence to those built for public purposes: for in these, public counsels have to be held, judgments awarded, and arbitrations given and adjusted. . . . In suburban houses the peristyle comes first, and then the atrium, having round it porticoes and terraces, overlooking the palæstra and places of exercise.” The latter part of this description applies only, as we are told, to the houses of the nobility; but the former part represents the general type of a Roman house, occupied by people of any position.

This description of a Roman house tallies exactly with the houses we see at Pompeii, and more especially with the house of Pansa; so much is this



HOUSE OF PANSA, POMPEII. A ROMAN HOUSE, AS DESCRIBED BY VITRUVIUS.  
A, Court. B B B, Col. C, Triclinium. D, Culina. E, Tablinum. F, Fauces. G G, Ale. H, Impluvium.

the case, that we might fancy Vitruvius wrote his description during a visit he was paying to that Ædile; unless indeed he built the house—for not only does the general distribution of the house agree with his description, but the proportions of the several parts agree with his rules: thus, he lays down the rule that the width of the atrium should be two-thirds of the length. The house of Pansa, as measured by Professor Donaldson, is 120 feet wide. Making a scale from that dimension, we find the atrium is 51 feet long:  $\frac{2}{3}$  of 51 = 34 feet, the exact width of the atrium.\* The impluvium is shown differently in different plans; so we cannot compare it with Vitruvius's rule. The tablinum, like those of most of the houses in Pompeii, is larger than what he directs; but he gives the width of an ala of such a house as two-sevenths of the length of the atrium:  $\frac{2}{7}$  of 51 = 14 ft. 7 in. the exact width. The peristyle is to be one-third longer than its width. It is 53 ft. 8 in. wide:  $53\frac{1}{4} + \frac{53\frac{1}{4}}{3} = 71$  feet, the exact length of the peristyle. The triclinium is to be double its width in length. It is 17 ft. 10 in. wide, and ought to be 35 ft. 8 in. long: but it is eight inches less only. This agreement is remarkable: and it is singular that the house of Diomedes corresponds with Vitruvius's direction that suburban villas should be entered at a peristyle instead of an atrium. Though all the houses in Pompeii are of the same general arrangement, the house of Pansa is the only one which complies perfectly with all his rules; and it is therefore fortunate for us that these cities at the base of Vesuvius have been preserved: for had we been dependent on the ruins which we find in Rome, England, and elsewhere of Roman houses, their plans and distribution are so varied, that it is only by wild conjecture and fanciful imagination that names can be given to the several parts. And the ruins of the Imperial Palaces at Rome give us no better information: for the architects who designed these palaces only thought of building something quite different from and superior to anything before seen. The wonderful and magnificent temples of Greece were robbed of their columns and precious marbles; and with them they built halls and porticoes and colonnades, succeeding each other in endless confusion and bewilderment, forming towns instead of houses. Not so is it with Pompeii and its neighbouring cities: here all is plain. We see the prothyrum, the atrium, the cubicula, the tablinum, the alæ, the fauces, the peristyle, the triclinium, the æcus, the exedra, and the culina; these last arranging themselves according to the peculiarity of the ground.

We will now see how this compares with Vitruvius's description of a Grecian house; but owing to his not having been in Greece, he was dependent for information on his Greek friends, sixteen of whom he mentions by name in the Introduction to his Sixth Book; and these sixteen may possibly have contributed each one item to Vitruvius—as the Twelve Apostles are believed by some to have contributed each one item to the Roman or Constantinopolitan creed, vulgarly called after their name—and Vitruvius may have jotted and jostled them all down together as they were given to him. The result, naturally, is a very confused medley, which we can make nothing of.† We will give the account as we find it, and will analyse it afterwards: for which purpose I have put numbers in the margin, with which the translation will correspond.

VITRUVIUS'S DESCRIPTION OF A GRECIAN HOUSE (from Schneider, Leipzig, 1807-8).

1. (3) Atriis Græci quia non utuntur, neque ædificant,
2. (2) sed ab janua introeuntibus itinera faciunt latitudinibus non spatiosis, et ex una parte equilia, ex altera ostiariis cellas, statimque januæ interiores finiuntur. Hic autem locus inter duas januas Græce *θυρωρεῖον* appellatur.

\* Sir Wm. Gell's scale is different: but his results are the same.—E. F.

† "Les explications que Vitruve a données sur la maison grecque manquent tellement de précision, que les archi-

"tectes qui ont voulu faire une reconstruction en le suivant  
"à la lettre, sont arrivés à des résultats si complètement  
"différents, qu'on ne peut y voir que des simples hypo-  
"thèses."—René Menard, *La Vie privée des anciens*.—E. F.

3. (4) Deinde est introitus in peristylum: id peristylum in tribus partibus habet porticus; in ea parte, quæ spectat ad meridiem, duas antas inter se spatio amplo distantes, in quibus traves invehuntur, et quantum inter antas distat, ex eo tertia dempta spatium datur introrsus. Hic locus apud nonnullos *προστὰς*, apud alios *παραστὰς* nominatur.

4. (7) In his locis introrsus constituuntur cœci magni, in quibus matres familiarum cum lanificis habent sessionem.

5. (5) In prostadii autem dextra ac sinistra cubicula sunt collocata, quorum unus Thalamus, alterum Amphithalamus dicitur.

6. (10) Circum autem in porticibus triclina quotidiana, cubicula etiam, et cellæ familiaricæ constituuntur.

7. (8) Hæc pars ædificii *Gynæconitis* appellatur. Coniunguntur autem his domus ampliores habentes latiora peristylia, in quibus pares sunt quatuor porticus altitudinibus, aut una, quæ ad meridiem spectat, excelsioribus columnis constituitur. Id autem peristylum, quod unam altiore habet porticum, Rhodiacum appellatur.

8. (1) Habent autem eæ domus vestibula egregia et januas proprias cum dignitate

9. (9) porticusque peristylorum albariis et tectoriis et ex intestino opere lacunariis ornatas, et in porticibus, quæ ad septentrionem spectant, triclina Cyzicena et pinacothecas; ad orientem autem bibliothecas; exedras ad occidentem; ad meridiem vero spectantes cœcos quadratos tam ampla magnitudine, uti faciliter in eis tricliniis quatuor stratis ministrationum ludorumque operis locus possit esse spatiosus. In his cœcis fiunt virilia convivia; non enim fuerat institutum matres familiarum eorum moribus accumbere.

10. (6) Hæc autem peristylia domus *Andronitides* dicuntur, quod in his viri sine interpellationibus mulierum versantur.

Here we see a startling difference at the first blush. Vitruvius says—"The Greek house has no atrium." This difference appeared so striking to Vitruvius, that he gave it the first place in his particulars, thus placing the room corresponding with the atrium before the prothyrum or entrance passage to the atrium, which of course ought to come first. The atrium is the distinguishing feature of a Roman house. It is the essential mark and primary type of all Roman houses. From the palace to the cottage, every house had an atrium. The patrician had one large enough to receive a number of people; while the plebeian had one as his tiny living room, at once his kitchen and his bedroom, and, if he had no shop, his workroom. Consequently the atria were of various sizes, from ten feet square to a hundred feet in length, according to the position of the owner; and of several varieties, as we have seen—Tuscan, Tetrastyle, and Corinthian. A house, therefore, without an atrium could not be a Roman house, or like a Roman house; and if so, then the Roman house could not be copied from the Grecian. Again, Vitruvius puts the vestibulum in the middle of the house; and as he mentions it in the plural, Wilkins, in his plan, puts three large chambers, which he calls vestibules, in the centre of his house: forgetting that Vitruvius is speaking of houses in the plural, not of a single house. Vitruvius places the women's apartments in front of the house, and the men's at the back: so that the men would have to pass through the women's rooms to get to their own! And lastly, at the end of his description, having to speak twice of the women not being permitted to mix with the men, and this in each case being connected with a peristyle, he joins the two passages together, and thus confounds the two peristyles—the entrance peristyle, and the Peristyle containing the Cyzicene triclina, the picture gallery, the library, and the cœci; and by so doing he gives the title of *Andronitis* to the wrong one. But let us examine the passage a little more closely. Vitruvius seems to state, as we shall see presently, that the vestibulum was the porch or lobby outside the front

door; therefore that should come first: so his No. 8 will become No. 1. No. 2 describes the entrance passage. We now enter the chamber corresponding to the Atrium of a Roman house, which is here called peristyle: so his No. 1 should become No. 3. His No. 3 describes this peristyle: so it will be our No. 4. But here we come to another confusion in Vitruvius's description. In his No. 4 he speaks of the *Œci* inside or behind the *Prostas*; while in his No. 5 he describes the *thalamos* on one side, and the *amphithalamos* on the other side of the *prostas*. Now that which is at the side must evidently come before that which is behind. The Latin word is *introrsus*, inwardly; *intro-versum*, towards the inside, or interior. He used the same word immediately before, in No. 3, where he tells us that the width of the *Prostas* is that between the *antæ*, while the depth of the *prostas*, taken "inwardly," was one-third less. So here, the word "*introrsus*," inwardly, must refer to something further back, or behind. His No. 5 therefore, and not his No. 4, should follow as No. 5. His No. 6 describes a *Triclinium* as in the *Peristyle*; but this *peristyle* must be the large *peristyle* at the back of the house; for *triclinia* are never found in the atrium: we therefore pass it by for the present. His No. 10 will now come in as No. 6; for, as we have seen, it was evidently in its wrong place before. This completes the men's apartments. We now come to the *Œci*, which he described in No. 4 as inside or behind the *Prostas*, and therefore in the large *Peristyle*: so his No. 4 should become No. 7. This large *peristyle* is described in his No. 7, which should become our No. 8. The description of this *peristyle* is continued in his No. 9, which coincides with ours; and still further in his No. 6, which becomes our No. 10. Thus we see that these Greek friends must have been all speaking in the same breath: so that it was impossible for Vitruvius to make out what they said. But we have their statements, and by the rules, or licence, if you prefer it, of *prosopopœia* we will personify their statements. Let us, therefore, call upon them, one by one, to tell us what they recollect. We will begin with No. 8, for he speaks of a vestibulum; so it is very proper that we should begin with him. No. 2 speaks of the entrance of the house; therefore he must come next. No. 1 says the Greek houses had no atrium, which we might expect to follow; but No. 3 explains that there was a *peristyle* instead, which he describes: so we will take his statement in support of No. 1. No. 5 tells us of the *thalamos* and *amphithalamos* at the sides of the *prostas* that the last witness described at the top of the "*peristyle*." No. 10 tells us that this "*peristyle*" was the *Andronitis*. No. 4 says that *behind* this "*peristyle*" were two large *Œci*. No. 7 informs us that we are now in the *Gynæconitis*; and therefore that the *Œci* mentioned by No. 4 were in the large *Peristyle*, which he then describes. No. 9 gives the names of the rooms round this large *Peristyle*, and No. 6 mentions some other rooms; while Nos. 11 to 16 confirm the statements of the ten, some supporting one statement, and some another. And now all the sixteen Greeks are of one accord. They say—We told you this, but we could not make you understand us. Thus, by analysing his description, and putting every part in its proper place, according to the numbers which I have placed at the head of each paragraph, we get the following result:—

#### THE GRECIAN HOUSE.

- (8) 1. The Greek houses have magnificent Vestibula, and imposing doorways.
- (2) 2. On entering, you see the stables on one side, and the porter's rooms on the other, so placed as to be near the entrance door. This doorway is of no great width, and the space between the doors is called *θυρῶπιστον*. He afterwards calls it the *διάθυρα*. It was between the inner door and the hall-curtain, or portière.
- (1) 3. The Greeks have no atrium (as we have); but you enter a peristylon.
- (3) 4. This peristylon has a portico on three sides; on that which looks towards the south (the further side) are two *antæ*, at some distance apart, supporting beams, forming an

(open) room, the depth of which is two-thirds of the width. This room is by some called *προστάς*, by others *παράστάς*.

(5) To the right and left of this *prostas* are the *thalamos* on one side, and the *amphithalamos* on the other.

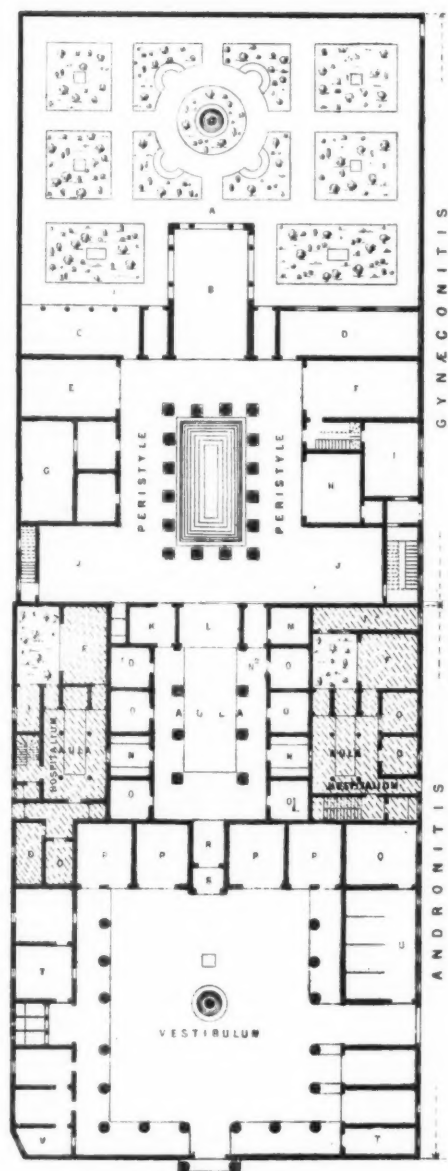
(10) 6. This "peristylum" of the house was called *Andronitis*; because men carry on their affairs there, without being interrupted by the women.

(4) 7. Inside (that is to say, behind) these rooms are large *œci*, in which the matron of the house and her maidens occupy themselves in spinning.

(7) 8. This part of the house is called *Gynaeconitis* by the Greeks. The *œci* just mentioned adjoined a large peristyle, on all four sides of which are lofty porticoes; but if that towards the south (the nearest end) is higher than the others, it is called a Rhodian portico.

(9) These porticoes of the peristyle are ornamented with stucco and painting, inlaid work, and lacunaria. In the northern portico are placed the Cyzicene triclinium (a triclinium open on three sides) and the pinacotheca; in the eastern the bibliotheca; in the western the *exedra*; and in that towards the south square *œci*, of sufficient size to hold four triclinia couches, and leaving sufficient room for the service and the games. These *œci* are for men's banquets, at which women are not accustomed to recline.

(6) 10. Round the peristyle also are ordinary triclinia, cubicula, and store-rooms.



GRECIAN HOUSE, AS DESCRIBED BY VITRUVIUS.

N. N. Mesauloi. S. Metabes. O. Cubicula. P. Thalamus. Q. Subularius.  
R. Diadema. S. Prothyron. T. Oslarius. U. Epulla. V. Auriga.

A. Xystus. B. Cyzicene Triclinium. C. Pergula. D. Pinacotheca. E. Exedra. F. Triclinium.  
G. Serv. H. Bibliotheca. I. Calina. J. Geat. K. Thalamus. L. Prostas. M. Amphithalamus.



I have placed my restoration of a Grecian house on the same plot of ground as that of the house of Pansa, and made the different parts as nearly as possible of the same size, the better to compare together the Grecian and the Roman houses; but it must be remembered that we are considering such houses in the time of Vitruvius. In the Homeric age, 900 B.C., the palaces were very large and capacious, though somewhat rude, the Megaron of the palace of Ulysses being capable of seating three hundred guests; but the common houses were very primitive. In the time of Pericles, 500 B.C., the houses of Athens were still very mean and contemptible, all honour being bestowed on the temples and public buildings—and the principal part of the city being reserved for these noble buildings; while in the time of Alexander, 350 B.C., houses became very large, and at the same time very elegant and refined, owing to the luxury and riches produced by conquests in the East. We must look back to this period, therefore, for the type of the particular form of Grecian house; and subsequently, to the time of Augustus, for the type of the Roman house; but the forms then in use had their origin in the Homeric period, though the names were changed. The Vestibulum of the Greek and Roman houses was the Homeric *Aule*; the Vitruvian *Aule* and *Atrium* were the Homeric *Megaron*; while the Vitruvian *Thalamus* embraced all the women's apartments in the time of Homer.

Let us consider what these several portions of the Grecian house were. We will begin with the Vestibulum. We have seen that it was common both to the Grecian and the Roman houses. What we find, therefore, in one may help us to understand the other. It is described in the Roman house as "magnificent"; in the houses of the nobility as "royal"; and in the Grecian house as "egregious," remarkable, distinguished, admirable. But Vitruvius seems—and is understood by writers, owing to the loose and complicated way in which his description of the Grecian house is written—to limit the vestibulum to the small open lobby in front of the door, say six feet by five feet, which the Greeks called *Prothyron* ("Prothyra" *Græce dicuntur, quæ sunt ante januas vestibula; nos autem appellamus prothyra, quæ Græce dicuntur διαθύρα*"), with stables on one side and the porter's rooms on the other. But we cannot understand how this could be called "magnificent, royal, egregious"; neither would there be room for the "stalls and shops, with cellars underneath," which Vitruvius says must be provided in the Vestibulum, whose owners have to dispose of the fruit of their lands; neither could a doorway be considered magnificent with stables on one side of it; and it would be still more monstrous to suppose that such palatial edifices could be built over reeking stables! I prefer, therefore, to follow Gallus and Macrobius, who tell us that the Vestibulum was an open court in front of the house—in fact, a cortile or courtyard, in which we can readily place, as Vitruvius directs us, shops and magazines in front of the house for the produce of the lands, with stables on one side of the courtyard and residences for the *Ostiarium* and *Auriga*, &c., on the other, approached by a portico or archway, and masked by colonnades: in fact, very similar to the courtyards of Burlington House, or Somerset House, and certain houses of the nobility, which we see both at home and abroad in the present day. This is what C. Cæcilius Gallus says, as quoted by Aulus Gellius:—"Vestibulum esse dicit, non in ipsis ædibus, neque partem ædium, sed locum ante januam domus vacuum, per quem a via aditus accessusque ad ædes est, cum dextra et sinistra inter januam tectaque, quæ sunt viæ juncta, spatium relinquitur, atque ipsa janua procul a via est, area vacanti intersita." And Macrobius, in like manner, calls it an intervening area between the public way and the house, "Ipsa enim janua procul a via fiebat, area intersita, quæ vacaret;" and indeed Vitruvius himself, in his description of the Baths, says: "In Vestibulo deberet esse porticus ad deambulationes his qui essent ingressuri." In the centre of this area was a statue of Zeus; and, we may presume, a fountain and basin. Pliny tells us it was ornamented with statues; and thus, with its columns and statuary, we may well conceive that it was sometimes

"magnificent," and even "royal." Here conquerors of distant countries would place some of the spoils they had collected, as statues, small obelisks, vases, or other trophies; and Cicero tells us that their country villas were so full of works of art as to astonish the beholder. Such vestibula, however, as Vitruvius has told us, would only be met with in country villas, and in the houses of men of rank and distinction in great cities. As, for instance, the Vestibulum of the Golden House of Nero—a courtyard so large that it had in the middle a statue of Nero 120 feet high. This is a proof, therefore, that the vestibulum could not be the small outer lobby in front of the door of every Roman house. There are none in Pompeii; but they would be required in Athens and Rome and elsewhere for the vast number of freedmen and plebeians who attended there at daybreak to pay their respects to their patron; some of whom only were permitted to enter the aula or atrium to see the great man; and the porticoes and colonnades would be necessary to protect them from cold and rain in winter.\*

Next, we have to consider the entrance "Peristyle" of the Grecian house, which occupied the same position as the Atrium of a Roman house. This name, "peristyle," given to Vitruvius by one of his Greek friends, has led writers into another misapprehension. They have represented it as a large peristyle, or courtyard, only a trifle smaller than the peristyle at the back of the house, because that is described as being "larger." It is certainly a peristyle; but it is unfortunate that Vitruvius's informant gave it this name: for its proper name is Ἀύλη, Latin *aula*, and translated *subdialis atrium*, a hall; going back to the simple hall, or room, of ancient times, as Horace describes it—"Caret invidenda sobrius aula." And Vitruvius himself, as we shall presently see, calls it by this name. And thus, when reduced to its proper proportion, it becomes what Vitruvius calls a Corinthian Atrium, only another name for a Grecian Atrium. In the Grecian Aula the hypæthral opening extended to the room in front, the *prostas*, which corresponds in position with the Tablinum of the Roman house; thus making the apartment very airy. The colonnade of the Grecian house was continued round three sides only, the open side abutting on the antæ of the room in front, hence called *prostas*, *parastas*, *pastas*. Pliny seems to have copied this arrangement of a portico in the atrium of his Laurentine villa, which he describes as "Porticus in Ξ literæ similitudinem circumactæ." The Homeric *Megaron* had a colonnade on three sides only. Plato, however, gives an instance of an aula having a colonnade running round all four sides, like the Roman atrium. The *prostas* was used in ancient times for the family meal, in order that, by facing the door, all people might see how frugally they lived. The Romans, inhabiting a country not quite so hot, reduced the hypæthral opening, and thus made a covered way all round the room, with or without a colonnade; thus getting a better access to the tablinum; calling it, if adorned with columns, a Corinthian (or Grecian) atrium; but if without columns, they called it, not from its origin but from its plainness, a Tuscan atrium.

In the next place we notice that the Greek house had no Alæ, and no Impluvium. The absence of the alæ diminished considerably the size of the aula, as compared with that of the Roman atrium, and when we connect this with the large size of the hypæthral opening, thus altering the whole character of the hall, we can understand how Vitruvius says—"The Grecian house has no atrium;" no large imposing covered hall, with alæ carrying the eye further, like our collegiate and civic halls, which frequently have an ala attached to them. But the Greek Aula, instead of an impluvium, had a spacious pavement between the columns, sunk a trifle below that of the covered colonnades, and covered with marble slabs, or rich

\* The mistake has arisen from the same word having a different meaning in the present day from what it had originally. The Latin word *vestibulum* corresponds with *πρόδομος*, a forecourt; while the modern vestibule signifies an ante-room or entrance hall. The *Proæton*,

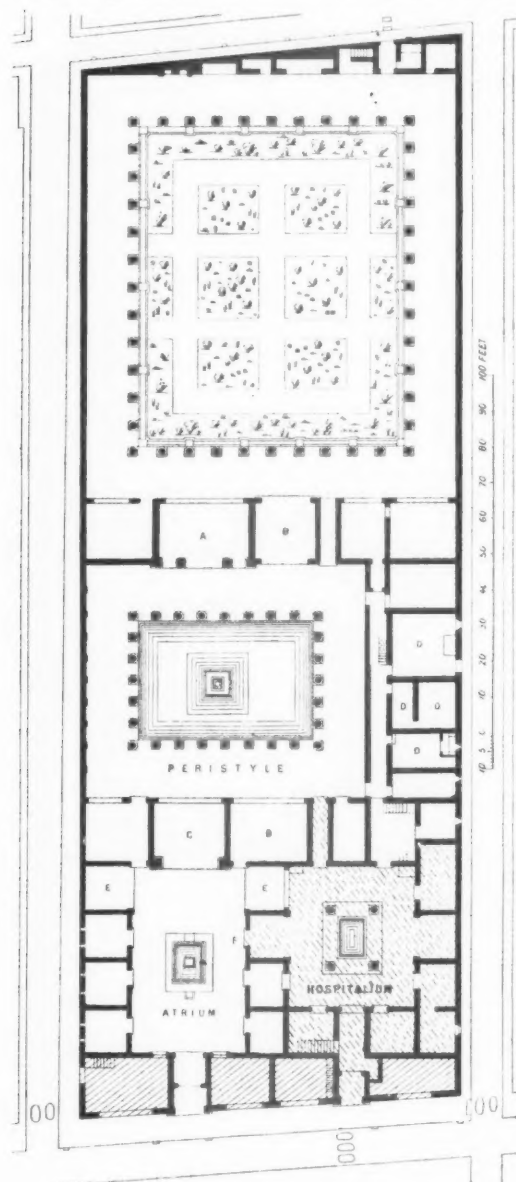
*προκοιτών*, is an antechamber before a bed-room; *προαύλιον* is the passage, *διὰ θύρα*, before the aula; *πρόθυρον*, the porch or lobby before the door; and so *πρόδομος* must be the forecourt in front of, or before the house, the vestibulum.—E. F.

mosaic, and was made use of by the master of the house and his friends, equally with, or rather in preference to, the covered parts; as in our Royal Exchange. This gave them more

air. It would hold almost as many people as the Roman atrium, and thus, occupying the same position, serving the same purpose, being lit in a similar manner, and ornamented with columns as we see in some of the Pompeian houses, as the houses of the Quæstor and of the Great Fountain, in the form called by Vitruvius a Corinthian atrium, we may regard it as the same hall as the Roman atrium, though they differed in detail, owing to the difference of climate.

The next peculiarity of the Grecian house was the *Thalamos*, or hymeneal chamber. It faced the entrance to the aula: and the Romans placed their *lectus genialis* exactly in the same position. The ancients had no religious "Form of solemnization of matrimony," as we have, though they went to the temple first to consult the haruspices, and afterwards to ask a blessing. It was important, therefore, in order to distinguish between wives and concubines, that the civil form should be a public one, known and seen of all men: so the bride was conducted formally to her bridal chamber, in the sight of all their friends in the Aula or Atrium. The rooms set apart for the thalamos and amphithalamos were used for this purpose only on this occasion; and returned afterwards to their ordinary use: for the bride, on becoming mistress of the house, would naturally dwell in the Gynæceum with the other females of the house.

It will have been noticed that Vitruvius describes "large Œci" behind the thalamos and amphithalamos, and north of the Atrium and Prothas, and consequently in the Peristyle; and that afterwards, in describing the rooms round this peristyle, he mentions "large square Œci" on the south side of the Peristyle. It is evident, therefore, that these Œci were identical, serving in the morning for the use and enjoyment of the women and for family gathering,



HOUSE OF THE FAUN.

A, Œcus. B, Triclinia. C, Tablinum. D, Culina. E, Alæ. F, Mesaulos.

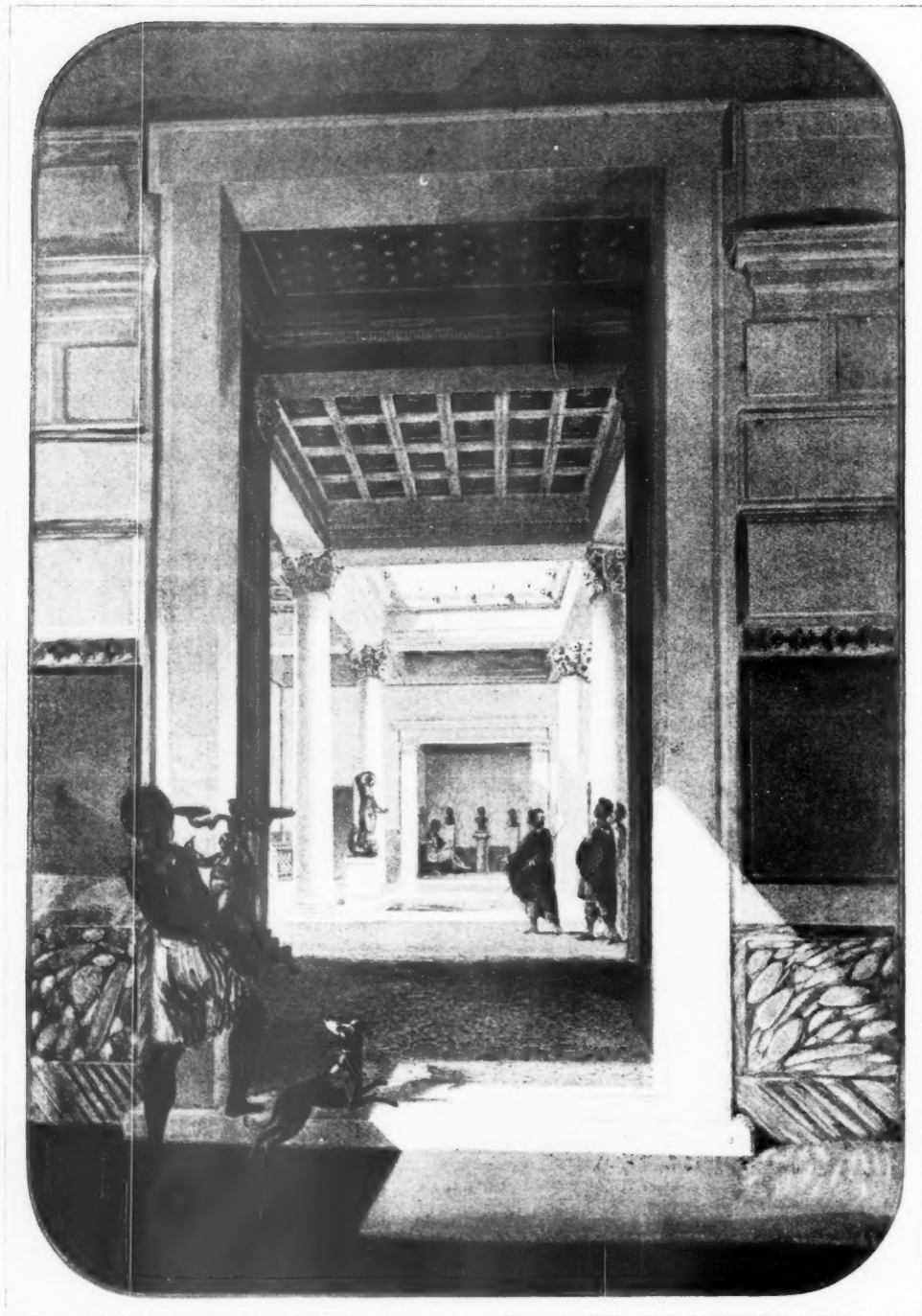
from which its name *Oikos* was probably derived; and in the evening for the banqueting of visitors or guests. It is possible that the two recesses at the base of the peristyle of the

House of Pansa, as contrasted with the *alæ* of the atrium, are a Roman representation, on a reduced scale, of these Greek *œci*. They occupy the same position, and would serve for the same purpose, a family gathering, or for our "five o'clock tea"; and their use by the Grecian maidens for spinning wool was followed by the Roman maidens for the same purpose, as we learn from Asconius in his Notes on Cicero's Orations. The Romans seem to have appreciated these recesses, but thought it desirable to transfer them to the Atrium, thus forming their *Alæ*.

Vitruvius calls the Peristyle, with its surrounding rooms in the Roman house, the private part of the house: in the Grecian house he calls it the *Gynæconitis*. But we are not to suppose that in either case the women slept on the ground-floor. It is certain that the women's sleeping apartments could not have been about gardens which contained triclinia and festive halls, where men were carousing at their banquets and symposia; and in a garden provided with a back door open to all, or at the caprice and corruption of a slave; and which might be frequently left open or unlocked through forgetfulness or intention; but as they had access to these rooms, and enjoyed the gardens and the fountain of the peristyle and the *œci* during the morning, this part of the house might be called by the Greeks *Gynæconitis*, because no one was allowed to enter it from the *aula* without permission, in consequence of the women being so constantly there, and because the staircase leading to the women's apartments was in this private part of the house. So far, then, from the women sleeping in the apartments surrounding the peristyle, we find that even in the Homeric period they had their chambers in an upper storey, the *ὑπερώιον*, and we are not told differently afterwards: we are merely told that they were sometimes met with in the rooms below. And as the Greek ladies had their *Hyperöon*, so the Roman ladies had their upper storey, the *Cenaculum*.

It is unnecessary to speak of the different rooms surrounding the Peristyle—the triclinium, the *exedra*, the baths, the kitchen, and other offices. These varied in position according to the irregularity of the ground. Even in the House of the Faun we find the peristyle twisted sideways, in order to make room for a second peristyle.

But there is another feature of the Grecian House which we must now refer to. The Greeks had small appendages connected with their houses, for the purpose of receiving their friends; just as we, in our great houses, give them suites of apartments; but their mode of entertaining them was peculiar. Vitruvius tells us they had a *Hospitalium* on each side of the *aula*, comprising necessary rooms for such purpose, connected with the *aula* by a passage called *mesaulos*, between the *aulæ*; there giving the apartment its right name, *aulæ*. He thus describes it:—"On the right and left are smaller houses, having their own doors (from the "outside), triclinia and cubicula; so that on guests arriving, they may enter at once into the "hospitalium, instead of having to pass through the 'peristylum' (*aula*) of the master of the "house. For as the Greeks became more civilised and richer, they prepared triclinia, cubi- "cula, and store-rooms for the convenience of guests; and on the first day invited them to "dinner; but on the following day sent provisions to them, chickens, eggs, fruit, vegetables, "and field produce, . . . for there is a communication between the two 'peristylia' (*aulæ*) "which is called *mesaulos*, because it is between the two *aulæ*"—"quæ mesaulæ dicun- "tur, quod inter duas aulas media sunt interposita"). The *mesaulos* has been mistaken for the *metaulos*. The *metaulos* was the door of the fauces opposite to the entrance of the *aula*, which led to the Peristyle; while the *mesaulos* was the communication between two *aulæ*, the *aula* of the master of the house and the *aula* of his hospitalium. In my restoration of the Grecian House I have shown the small *aulæ* of the hospitalia as peristyles, to be in keeping with the house itself; but in all probability these small *aulæ* would merely have a compluvial opening in the roof, like Roman atria. Now, it is interesting and highly satisfactory to know

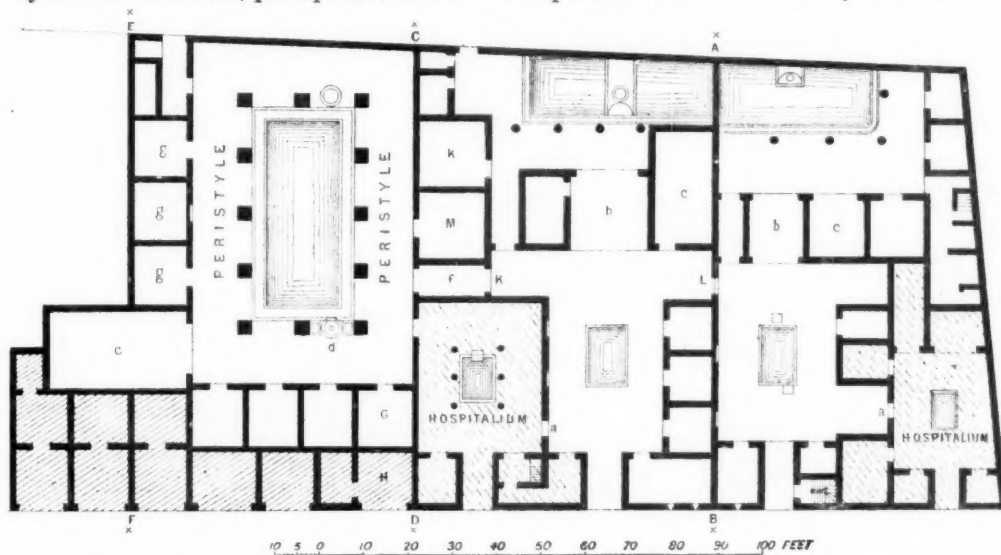


THE MESAULOS OF THE HOUSE OF THE FAUN. (*From a Water-colour Drawing by Mr. Falkener.*)



that a Hospitalium is attached to several of the houses of Pompeii, the atria of the two houses being connected together by a mesaulos, as we see in the Houses of the Faun and the Quæstor [see plan, p. 44]; and we find it even in so small a house as the House of the Little Fountain; the two latter drawn to a larger scale.

It is interesting likewise to see that the adjoining house, that of the Great Fountain, also had a hospitalium; the more so that there are not so many examples of it in Pompeii; and it is curious to notice the changes that were taking place in the houses of Pompeii at the time of the destruction of the city. The owner of the land in this Street of the Mercuries evidently sold it, or let it out on building leases, in square plots. The first plot went from the corner of the street to line A B, and forms the House of the Little Fountain. The next plot up to c d formed the original House of the Great Fountain. These two plots appear to have been taken by friends or relatives, perhaps brothers: for the disposition of the houses is very similar, each



HOUSE OF THE GREAT FOUNTAIN BEFORE CONVERTED TO A FULLONICA.

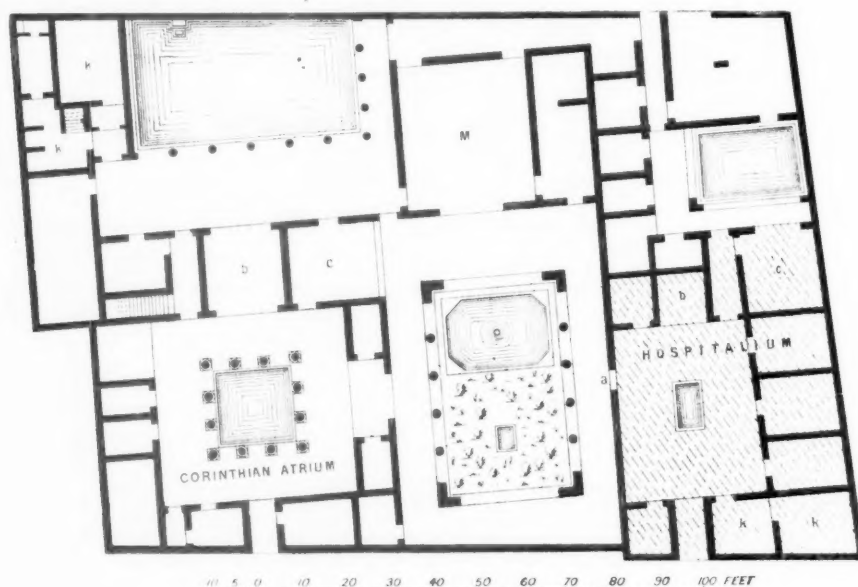
HOUSE OF THE LITTLE FOUNTAIN.

a, Mesaulos. b, Tablinæ. c, Triclinia. d, Fountain. e, Tabernæ. f, Fauces. g, Balneum. k, Culina. m, Cæus.

[Explanation of the capital letters, A, B, C, D, E, F, G, H, K, L, is given in the text.]

having a hospitalium and a pseudo-peristylum, with a fountain of very similar character, and having a door of communication between the two houses, at L. Subsequently, however, the owner of the second house, becoming richer, took the third plot, reaching to E F, and some small adjoining pieces, and built a large peristyle with square piers, supporting colonnaded porticoes above, on an upper storey; a proof that the houses of Pompeii had upper storeys of great magnificence, which I cannot, however, now refer to. He also obtained a large triclinium, opening into the peristyle; he built baths, the evidences of which I discovered in 1847; he turned one of the rooms of his old house into an æcus to his new peristyle; he ornamented the peristyle with beautiful paintings, with a fountain having jets falling into two adjoining basins, and with an elegant marble puteal. But subsequently he, or his successor, perhaps from reverse of fortune, or from the common cause of over-building, was obliged to sell the peristyle and the sumptuous buildings above to a dyer, who converted the premises into a fullonica; destroying the baths; building in a corner of the peristyle four large square vats,

seven feet deep, for the purposes of his trade; closing the opening L of faux, and opening the cubiculum G, and shop H, to get an entrance from the street. The late owner also gave up his hospitalium, which the dyer made use of as his counting-house, enclosing four of the columns

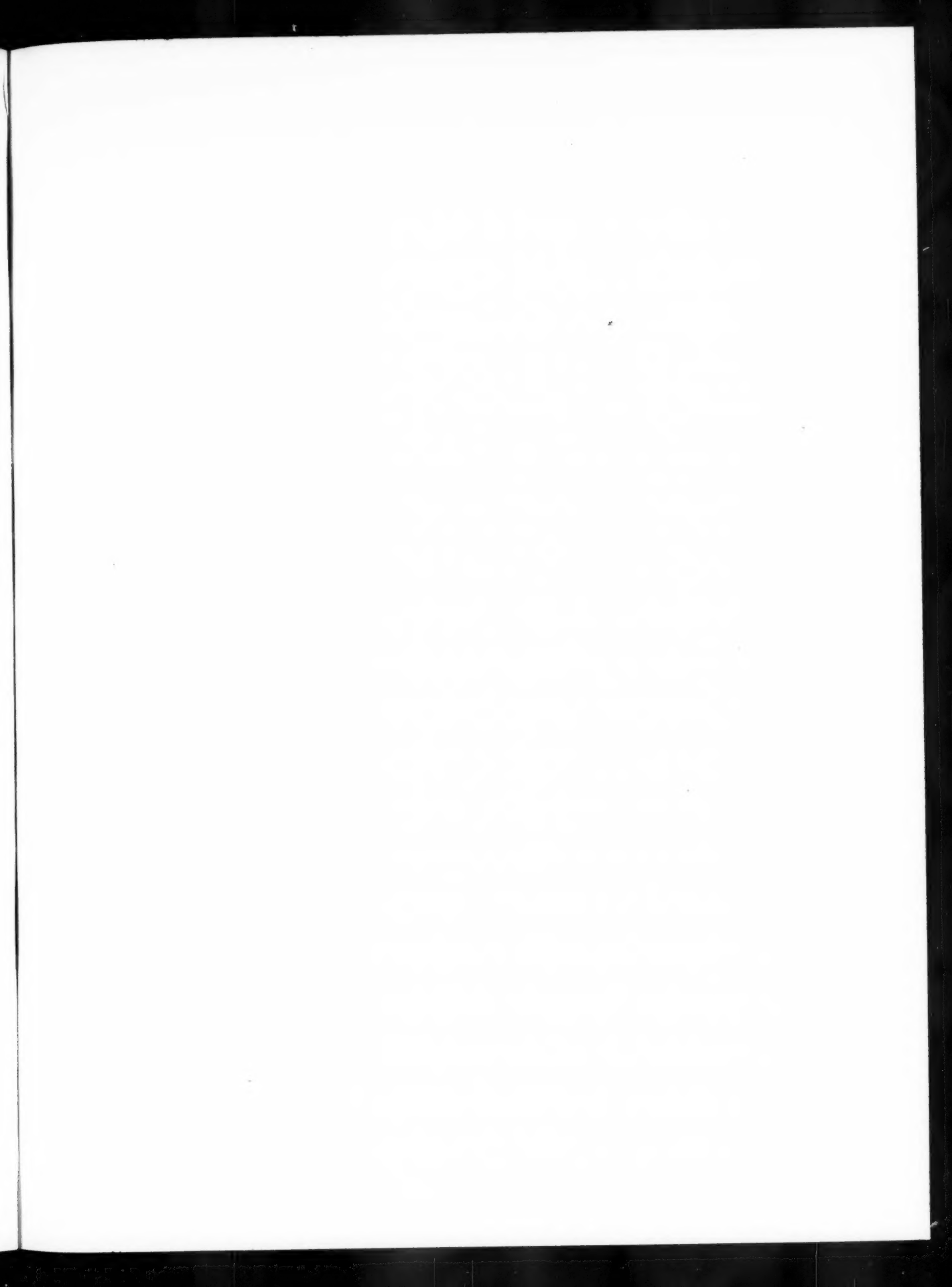


HOUSE OF THE QUESTOR.

a, Mesaulos. b, Tablinum. c, Triclinium. d, Culina. e, Atrium.

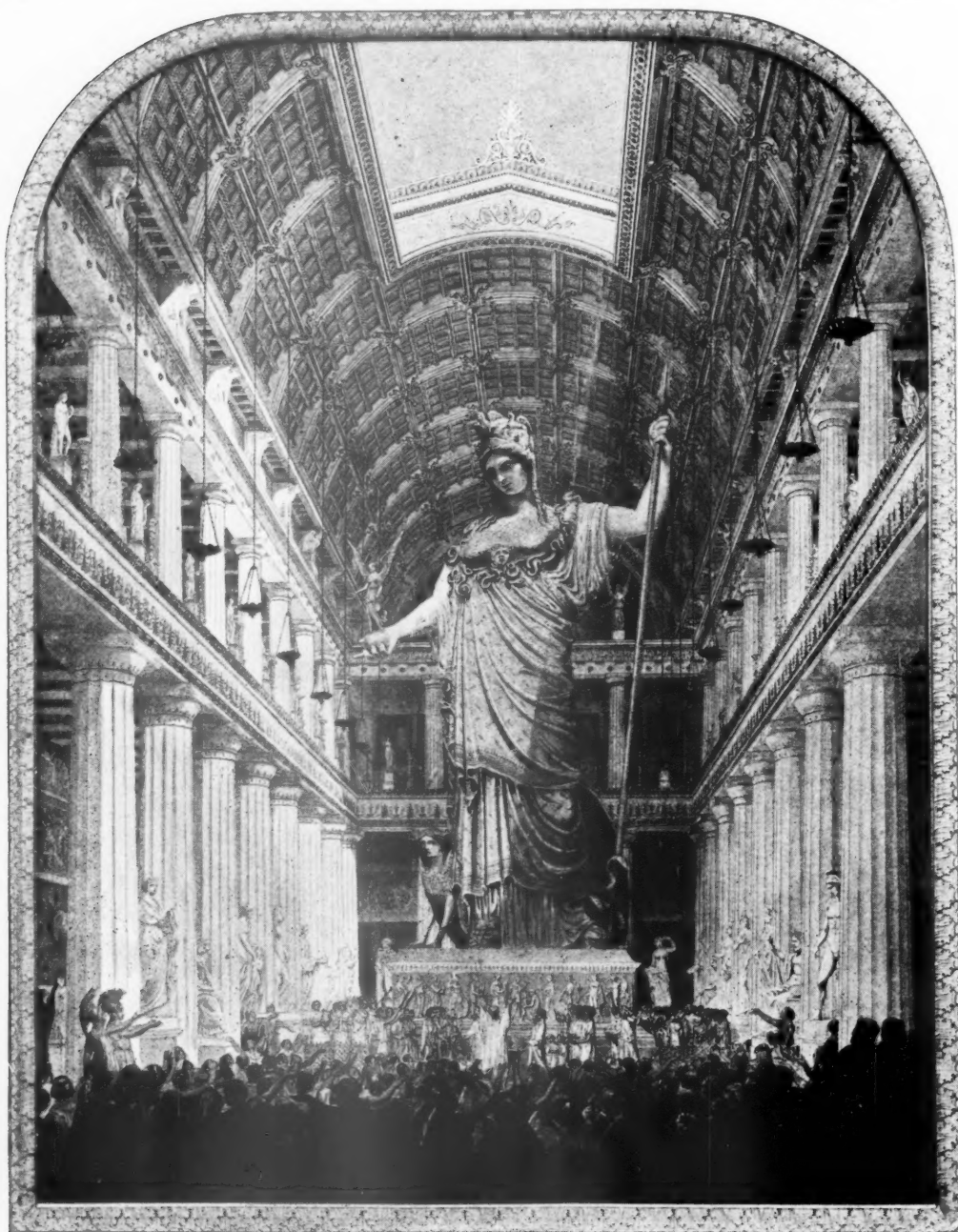
in walls, so as to form closets or store-rooms; and finally he cut out some of the paintings in the peristyle, in order to substitute pictures connected with his trade. The house of Marcus Lucretius, excavated under my superintendence in 1847, and published in my *Museum of Classical Antiquities*, is another instance of enlarging a house. There the alteration was only prepared for: but here it has been carried out, and then destroyed, to make way for a new alteration. Other examples might be adduced, but they can only be discovered by long study.

A doubt may be expressed by some as to the hospitalium of the House of the Faun [see plan, p. 40], it being in so great a contrast to the house itself, which is the grandest yet discovered in Pompeii—a house with a double peristyle, the first of which is in two storeys, and enriched throughout with beautiful mosaic pavements. From a number of amphoræ having been found in a corner of the peristyle, the owner of the house has been considered to be a wealthy wine merchant, and that this was his shop; but there is no reason for such a theory, for we have seen that in the vaults of a stately villa at Baiae, belonging to Hortensius, there were found 10,000 amphoræ of choice Chian wine. Moreover, the tetrastyle atrium would be out of place for a shop; besides which there are two shops connected with the principal atrium, in which, no doubt, the owner's slaves sold the produce of his estates. But stones and other building materials were found in this house, showing that it was in process of alteration; and this hospitalium was about to undergo alterations and embellishments. It is very probable, however, that these hospitalia were used, when not occupied by guests, for the reception of tradespeople and plebeians; for two money chests were found in this tetrastyle atrium, while patricians, friends, and clients were received in the principal atrium. It will be observed that



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*From a Water-colour Drawing by the Author.*

*Vol. I. Third Series*

THE PARTHENON  
AS RESTORED BY MR. FALKENER

the second cubiculum, on right of principal atrium, has a door into each atrium. This was to enable the room to be used as a bed-chamber, either for the principal atrium, or for the hospitalium, as need required.

Thus we find that the Roman house was copied from the Greek house, not merely in its general arrangement, but in its details. The Vestibulum was in common; the Prothyron of the Greeks became the Ostium of the Romans; the Diathyra of the Greeks the Prothyrum of the Romans; the Aule became the Atrium; the Hypæthron the Compluvium; the Prostas the Tablinum; the Thalamos the Lectus Genialis; the Metaulos the Fauces; the Hyperöon the Cenaculum; and the Peristyle, Xystus, Triclinium, and other parts were in common. And this is confirmed by the fact that the names of most of the parts of the Grecian house were adopted by the Romans, as prothyrum, peristyle, thalamus, æcus, exedra, pinacotheca, bibliotheca, xystus; and I think we may add the word atrium, taking its name from αἶθρια, αἶθριον, ὑπαίθρος, ὑπαίθρον, denoting the serenity of the air in such a deliciously cool apartment; and I have further endeavoured to show that not only was the Roman house copied from the Greek, but that the houses of Pompeii exhibit all the features of the Roman, and some of the peculiarities of the Greek; thus denoting the constant intimacy from times immemorial between the two countries; and how the Italian habits and customs were borrowed from Greece, and not from Etruria.

This Paper, as I have already mentioned, having grown out of an observation of mine reported to you at your Meeting on the 19th of December last, respecting the vertical hypæthral opening of the Greek temple being the natural result of the vertical hypæthral opening of Greek houses—as our churches are lit in the same manner as our houses—and your having honoured me by making a photographic reduction\* of my restoration of the Parthenon showing such hypæthral opening, I may be permitted now to mention that I consider such vertical hypæthral opening, as I have advocated elsewhere, and through which the gods were believed to descend occasionally into the temple, to be only the more confirmed by the various hypotheses that have been started of a contrary nature; each hypothesis combating and contradicting all the others. One writer says the temples were hypæthral, because not completed; another, because the light was admitted from another part of the temple, thus forming a borrowed light, this borrowed light being supplied in one instance from an unsightly, but fortunately only an imaginary, trench, 13 feet deep, cut out of the roof, the whole length of the aisles on either side, in the Parthenon; and from a huge frightful open area, 50 feet in length, supposed to exist for this purpose intermediately between the pronaos and the naos of the temple of Jupiter Olympius, although there is neither authority for, nor example elsewhere of, the existence of such a rude area intervening between the pronaos and the naos of a Greek temple. Another writer, because they were lit by small skylights or dormer windows, contrived here and there in the tiling; though these were undoubtedly used for lighting long suites of chambers, 13 feet wide and 11 feet high, contrived within the roof, these chambers in the roof being probably the cause of so many of the temples being burnt. Another, because they were lit from the east doorway at the time of sunrising. Another, because the lacunaria were open before the covering slab was put over them, and that the slab was painted with a star in remembrance of such opening. Another, because they were lit like a picture gallery, to show all their wondrous sculpture and pictures and votive offerings. Another, because they were dark, like Egyptian temples, except at sunrising, the exception forming the rule; while another states that Vitruvius made a

\* See Plate; also *The R.I.B.A. Journal*, Vol. IX, N.S. pp. 96-104



mistake in calling them hypæthral. One writer affirms that what was opposed to his theory was an "architectural bathos"; another, that all other solutions opposed to his were "adverse to the sober-minded cultivation of scientific archaeology." . . . *Ohe! Satis est—nay, Nimis est.* It is delightful, in such a conflict of opinions, to fall back upon Vitruvius's simple expression, hypæthral, *sub divo*, and to take it in its natural sense, and rest there, and to believe that as the Greeks found such vertical opening so pleasant in their own houses, they would delight in having it in the magnificent temples to their great gods, so elegantly enriched as they were internally, and so stored with the noblest works of art, and with everything that was beautiful. An objection has been made to it, however, that the beautiful chryselephantine statue of the god would suffer from such exposure; but on examining the plan of the Parthenon it will be seen that the opening *might* be 40 feet away from the statue—so that objection falls to the ground; besides which, the opening would doubtlessly be provided with awnings and other coverings, when necessary. But this also I submit, with great deference, to the judgment of the Institute.—EDWARD FALKENER.

#### DISCUSSION OF MR. FALKENER'S PAPER.

Mr. PENROSE [*F.*].—Mr. President and Gentlemen, the subject of the Grecian and Roman house is not one I have myself particularly studied, but with Mr. Falkener's representations it really receives a great accession of light. I think his analysis of Vitruvius's derivation of a Greek house is quite admirable. I do not mean to say that any one studying the question minutely may not find some points of difference; but on the whole I think he is justified in taking Vitruvius's account of the Grecian house as a general summary of the facts, without being obliged to suppose that he follows in the order from the entrance to the back of the house. It is evident that the Grecian house of the period that Vitruvius was speaking of was derived by very direct evolution from the earliest houses which are mentioned by Homer, and such other authorities as can be brought to supply an account of the earliest houses. In the account of the house of Ulysses, which is the one most clearly laid out, and which is where a great part of the action of the *Odyssey* takes place, there is not only the first account of it, but a good deal may be made out from the subsequent chapters of the story; and no one has thrown more light upon it than Professor Jebb. In his account of the Homeric times he devotes a chapter to the discussion of the Homeric house, which is thoroughly worth reading with reference to this question. In that case it was evident that the entrance was by a door into the courtyard, and in that courtyard there were all sorts of things done: the oxen and sheep were brought in previous to being slaughtered, and it was what in the north of England would be called the crew-yard, a place where a great deal of rough and dirty work was done. Then luckily we have at Tiryns a Greek house of that period remaining in foundation to a great extent, although it has been rather interfered with by more recent structures which perplex it to some extent, but still the

main conception of the house can be thoroughly well made out from the work at Tiryns. It is a little assisted by the remains of another house at Mycenæ, and I understand that more recent excavations at Troy supply some further illustrations. But the house at Tiryns is the great text from which the account in Homer can be assisted; it is not identical with the account in Homer, and who would have expected that all houses would have been identical? But the entrance there is into a court; then it proceeds to a portico; then to an aula, or large paved court, which has pillars on each side of it, which represents very distinctly the aula in which the suitors of Penelope were accustomed to feast, and where finally Ulysses standing on the threshold was able to shoot his arrows to destroy them. In that case it is apparent, though it is not certain, that the house of the women, the Gynæconitis, was on the side at Tiryns; but in the Homeric house it must have been at the back. It is curious that the only illustration we have of the Greek house is from that very early period; it may be hoped that in some future excavations—because we have by no means got everything that can be got from the excavations yet—some veritable plan of a house of a later period of Greek times may be unearthed, and I think the most likely ground is Ephesus, where the Cayster and its tributaries have covered over a great part of the site of the city with mud to a depth of between 20 and 30 feet, so that it is extremely hopeful that some time or other a real Grecian house of the fourth or fifth century B.C., or later, may be brought to light. I should be very sorry to attack any one of Mr. Falkener's points on the subject of his interpretation of Vitruvius as to the Grecian house, or, indeed, the Roman; because with the Roman he is on very safe ground, having the houses at Pompeii to work upon. He has not mentioned one rather interesting point, which is

that each of these houses must have had a posticum; because Horace, in an amusing passage, advises one of his friends to escape from the crowd of suitors and people who came to him on business by means of the posticum:

*Atria servanem postico falle clientem.*

With regard to what Mr. Falkener has said subsequently on the matter of the Hypæthrum, I think I should take issue with him on that ground, but very little on the subject of his main paper. If it is the time to move a vote of thanks to Mr. Falkener, I shall be glad to do so, and also to Mr. White for having so very clearly read, and enabled us to follow, the Paper and its illustrations.

DR. A. S. MURRAY, F.S.A. [H.A.].—If, Sir, I understood Mr. Falkener's Paper, one of the chief points in his argument was the identity of the Roman atrium with the Greek peristyle; whether he meant it or not, that seems to me to be a very important part of this question. He gave me the impression that this identity or similarity of these two things had been disputed; but that is not the case in the German book to which I am accustomed to defer in these matters—Nissen's *Pompeianische Studien*. Nissen expressly points out the similarity of the Roman atrium and the Greek peristyle, but he sets to work in a different way from Mr. Falkener. He does not trouble himself with these later palatial houses of Pansa and that sort, but goes back to those very numerous remains in Pompeii of small houses which are built of square blocks of limestone of one storey, and each having only one single open court with chambers round it on three, or two, or one side. These houses he traces back to about 300 B.C., and therefore gets away out of this atmosphere of Vitruvius and this pseudo-Greek architecture in Pompeii. And then he goes on arguing that when the great renovation of Pompeii came in, in times of wealth and riches, the rich man who had begun with a small limestone house, bought his neighbour's up, kept his original atrium, turned his neighbour's into a peristyle, and so went on adding new peristyles as he acquired new houses from his neighbours. Then, as to the derivation of the word *atrium*, we know that the Greek word *μελαθρον* is very much the same word substantially as the Latin *atrium*, meaning a room which in primitive times had the smoke rising from the hearth.

MR. E. P. LOFTUS BROCK, F.S.A. [F.].—Sir, as the last speaker has not seconded the vote of thanks, may I be permitted to do so, for Mr. Falkener is an old friend of mine? In the presence of so many learned members to-night, I do not propose to say more than that, within the last three or four years, Dr. Flinders Petrie has brought to our notice several ground-plans of an Egyptian house, notably those at Kahun. In these there are many points similar to some of those which have been raised to-night, and I

would venture to commend his book to your careful inspection. In addition to the fact that some of the houses have halls opening one into another, there is also in a few a very curious arrangement for getting at the women's apartments; the men had evidently a separate entrance and the women another. All these houses are of earlier date than any Greek or Roman buildings of easy reference, and their general resemblance to such works is noteworthy.

PROFESSOR AITCHISON, A.R.A. [F.].—It would, Sir, be pleasant to hear a Paper by my old friend Falkener, the learned editor of the *Museum of Classical Antiquities*, and the author of the *Games of the Ancients*, however dry the subject might be; but his Paper is delightful, for in it he gives us a description of that charming country Campania, and of its seaside towns which he visited years ago. He has, too, supplemented his personal recollections with passages from Homer, Virgil, and Strabo, and with references to many of the great men who had villas there and to the great writers who visited the towns in their palmy days. He tells us, for instance, of Hortensius having as much wine, at one of his country houses there, as would fill a quarter of a million of our bottles. He also tells us of Rome getting all its civilisation from Greece, and of the prevalence of the Greek tongue; Greek seems to have been more familiar to the educated Romans than French is to our educated men. The great Lucullus wrote a poem on the Marsi in Greek, and Cæsar's celebrated "*Et tu, Brute*" was, according to Suetonius, spoken in Greek. There is one little point I might remark on: the use of the words *compluvium* and *impluvium*. They are mostly properly given in the translations of the classics by the word *skylight*. *Impluvium* was the literary word used by Plautus, Terence, Cicero, and others, while *compluvium* was the technical word, for we must suppose that Vitruvius knew the proper technical expression, and he uses the word four times; while *impluvium* is not to be found in his book. I speak of the edition of Rose and Müller (Strübing, 1867). The passages I am most familiar with are those from Terence and from Plautus. Terence, in the *Eunuchus*, speaks of Jove going over the tiles and through the skylight to Danaë; and this play was translated from Menander. In the *Amphitruo* of Plautus the serpents came to Hercules through the skylight, and in the *Miles Gloriosus* the slave, pursuing a monkey over the neighbour's roof, peeps down the skylight. This play is supposed by some to be translated from the Greek of Alexis; he also speaks of women wearing skylight dresses (*impluviata vestis*) in the *Epidicus*. These plays may have been adapted from the Greek; but if not, the *compluvium* came from the Grecian house. I regret that, even in spite of Pompeii, we know so little of the exact uses of the rooms in the Roman house, and unless we are lucky enough to

find an illustrated MS. of Vitruvius, or the ruins of a Grecian house of his day, all that we can do is to improve our skill in planning by drawing out the house from Vitruvius's description. Vitruvius, it is true, mostly spoke about what was known to his readers, and was, therefore, not bound to make himself understood by the ignorant, for I doubt if any one could draw out anything more complex than a temple from his descriptions. I do not know if Vitruvius ever visited Greece or Magna Græcia. Mr. Falkener has, however, shown even greater boldness with his author than Wilkins. Wilkins attributed Vitruvius's supposed mistake that the temple of Jupiter Olympius was octastyle to the ignorance of a scribe, for Mr. Penrose has since found that Vitruvius was right. Mr. Falkener supposes that Vitruvius never saw a Grecian house, and merely put down at haphazard what some Greeks had told him. I freely admit that in putting the men's court in the front and the women's at the back, Mr. Falkener has made the house more agreeable to our notions of Grecian habits, but he is allowing himself a free hand with his author. In spite of this we are greatly obliged to him for the pains he has taken in trying to elucidate the text and in making a working plan according to our ideas. As Mr. Falkener sums up the arguments on the lighting of Greek temples, I cannot help saying something on the subject. We must accept Vitruvius's statement that there were such things as hypæthral temples. The Kaaba at Mecca was originally an hypæthral temple. Mr. Falkener is, however, the exponent of an entirely different theory; he contends that if Vitruvius says there were hypæthral temples and does not say how temples that were not hypæthral were lit, it is evident that all temples were hypæthral, but I for one do not think that this conclusion is logical. I confess that at an early period of my pupilage I thought it odd that these great idols of ivory and gold should be left in the open air like the statues in the Groves of Blarney. We know from Pausanias that the ivory of some of these idols suffered from over-dampness and were oiled, and others from over-dryness and were damped. Doubtless many of the theories propounded on a former occasion were made on the spur of the moment, but it would be no great compliment to Mr. Penrose nor to Dr. Dörpfeld to class them in that number. Mr. Penrose has just found out for us that Jupiter Olympius at Athens was octastyle, and has probably discovered what the hypæthrum there was. Any one who has the honour of knowing Mr. Penrose or Dr. Dörpfeld will feel quite certain that there is no passage in the classics which could throw a light on the question that they have not consulted before propounding those theories, which took so many of us by surprise. In again returning my thanks to Mr. Falkener I may say that we are doubly grateful to him, first, for his notices of the Grecian and the

Roman house, and, secondly, for again calling our attention to the still vexed problem of the lighting of Greek temples.

MR. PENROSE [*F.*].—Sir, I reserved any remarks that I had to make on the hypæthral temple, because I thought it more important that the house question should not be stopped or diverted into another channel; and Professor Aitchison has very much anticipated what I had to say. But this seems perfectly clear, that Vitruvius, whether or no we accept him as a guide through the house or through anything he describes, is, I think we may feel perfectly sure, an honest recorder of information on the subjects he treats of; and, therefore, when he tells us that there were temples of various kinds, going through the temples, the temple in antisprostyle, and the amphiprostyle and all the varieties, he passes at last to the hypæthrum, and, after describing all the others, he only names one class of hypæthral temples, and of this he can only name one example, that being the octastyle temple of Jupiter Olympius at Athens. It follows from this that the other temples of smaller size were not hypæthral, and therefore we are left to consider how those temples could have been lighted without this skylight. The doors were very lofty, and would admit a great deal of light when the sun was rising in their direction. Vitruvius gives us the hint that on those occasions, when the worshippers were making their orisons at sunrise, the gods would appear to rise from their seats. That is just what a person in a state of religious ecstasy might fancy; that when the sunbeams at sunrise struck upon the statue it would appear to enlarge itself and almost to rise. That is in favour of the idea that, generally speaking, the sun coming in by the eastern door shone upon the statue, and that that was the main lighting of the temples. Again, in the case of the chryselephantine statue, it would have been impossible to have preserved the statue from injury from the weather if there had been a large hole of that kind, whether or no it was protected by curtains in any sort of way. The deluges of rain that fall at Athens are something that here—much rain as we sometimes have—we really have no idea of. I remember once at Athens, by the Temple of Jupiter Olympius, before the ground was made up as it is now, a sudden fall of rain occurred, and there was immediately a pond of large size, twice as big as this room, formed of water of some depth in front of the columns. Such rain would have fallen upon the statue and drenched it, and injured it to a great extent, if it had been only protected by awnings. Therefore, it is quite clear to me that where elaborate statues were placed they must have been protected by a roof.

MR. H. H. STATHAM [*F.*].—Sir, I only wish to say one word after what has been said by Professor Aitchison and Mr. Penrose on this subject.

I came here with the distinct intention of making a protest against what I call the insidious postscript which I believe is the *raison d'être* of Mr. Falkener's learned and interesting Paper; the argument being this: The Roman atrium had an opening at the top; the Roman atrium was copied from the Greek; the Greek, having an opening in the top of his own house, would be likely to put one in the top of his temple. As to the arguments against such an arrangement as is shown in Mr. Falkener's illustration, Professor Aitchison and Mr. Penrose have said nearly all that need be said; but there is one very striking argument which Mr. Penrose omitted to mention, and with which his name has been connected—that is, the very much increased importance which has been given lately to the idea of orientation not only of the Egyptian but of the Greek temples; and, of course, if the temples were specially built so as to be orientated, that immediately connects them with the idea of being lighted by the rising sun, and furnishes a reason why a door might have been considered sufficient without any other means of lighting. There is another point I have noticed in several discussions that have been reported on this subject at different times. Over and over again, in discussing the subject of hypæthral lighting, people refer to Pausanias's description of a temple, and say "Pausanias says nothing about the lighting." But surely it might have occurred to people that if Pausanias often spoke of temples, and said nothing about the lighting, it was because there was nothing to say. I think that is a strong negative argument in favour of the idea that these temples were really lighted from the door and not from any windows, the position of which none of us can arrange satisfactorily. And, Sir, I want to enter a protest against that illustration in Mr. Falkener's Paper from another point of view. Mr. Falkener complained very truly of the terrible trench which the late Mr. Fergusson cut along the roof of the Parthenon at each side, which, from any position, must have been the greatest eyesore, not to speak of the fact that there is no sort of coin representation of anything of the kind. But if Mr. Falkener objects to Fergusson's longitudinal trench, I object just as much to his slash across the roof. How would it look from the outside? A great piece cut off from the middle of the roof! And from the inside I think it has the most commonplace and ill-considered appearance; it looks like an afterthought, and I should entirely refuse to believe that the Greeks could have treated such a building as the Parthenon in such a way, even supposing they wanted to light it from the top, which I think most people now agree they probably did not.

PROFESSOR KERR [F.].—Well, Sir, that question being settled at last, perhaps we may turn to what I understand to be the real subject

of the Paper. The House of Pansa, as delineated in the plan before us, gives us a very striking illustration of the Oriental origin of the plan of the Latin house. The difference between the Latin house and the Teutonic house is radically this: that the Latin house surrounds a court, and the Gothic or Teutonic house surrounds a hall. There is no hall in the Pompeian house, or in the Greek plan derived from it by Mr. Falkener. You observe that the central feature of the plan is the so-called peristyle. That peristyle is in reality an interior courtyard. It is of considerable size, and open to the sky with the exception of the colonnade around it. In order to find access to this chief central apartment there is in front an atrium, or what we should call nowadays an entrance-hall. There is in Mr. Falkener's theoretical Greek plan (and the idea is supported by what Mr. Penrose has said) an outer courtyard, corresponding to our forecourt, and on a large scale. Then there is the garden at the back of the central peristyle, and between the garden and the peristyle there is in the House of Pansa what I take to be the triclinium; while in the same position in his Greek house Mr. Falkener restores the Cyzicene triclinium, which is a dining-room open to the garden on three sides, and therefore very appropriate to an Eastern or Southern *ménage*. All this is conspicuously distinguished from the Teutonic or Gothic plan which is characteristic in England and Northern Europe, wherein the hall, enclosed and wholly covered from the weather, is the central feature. It seems to me, therefore, that this plan of the Roman or Greek house is very instructive. The same Latin principle is still carried out in modified forms by the Spaniards, the French, and the Italians at the present day; whereas all the Teutonic nations discard the internal court entirely as a place of abode, and rely upon the covered and enclosed halls.

THE PRESIDENT said that he did not pretend to be an expert on the subject before the Meeting, and therefore would not detain them with any remarks of his own. It seemed impossible ever to treat of Greek architecture, either directly or indirectly, without drifting into the interminable question of hypæthral lighting, and that would never fail to be the case, as it was a problem which it was now absolutely impossible to solve. He wished, however, to refer to the very beautiful drawings which Mr. Falkener had lent as illustrations to his Paper. Those water-colour drawings were, the President believed, the work of his own hands; and, in putting the vote of thanks to Mr. Falkener, he was sure that, although of course the reading of a Paper naturally lost a great deal for want of the personality of the author in delivering it, he himself, had he been present, could not have been otherwise than pleased by the intelligent mastery of the subject displayed by its reader.





## CHRONICLE.

### THE INTERMEDIATE EXAMINATION.

At the General Meeting of the 20th inst., the President announced that an Intermediate Examination to qualify for registration as Student had been held at the Institute on the 14th, 15th, and 16th inst.; and that of the 25 Probationers who applied, 21 had been admitted—twenty of whom presented themselves, and were examined. Of these, fifteen had passed, and five were relegated to their studies. The fifteen, placed by the Board of Examiners in order of merit, are—

BRAND: Walter, Sunny Bank, Warrington Road, Ipswich [Master: Mr. B. Binyon\*].  
 WONNACOTT: Howard John, 280, Lordship Lane, S.E. [Master: Mr. T. Wonnacott\*].  
 TYLEE: Edward, 29, Oxford Square, W. [Masters: Sir A. Blomfield\* and Sons].  
 HAMMOND: Frederic Snowden, 1, Circus Place, E.C. [Master: Mr. F. Hammond\*].  
 SCORER: George Oakley [Lincoln], Abercorn Lodge, Upper Hamilton Terrace [Master: Mr. R. Selden Wornum\*].  
 CHATTERTON: Frederick, 14, Hillmorton Road, Camden Road [Master: Mr. John T. Lee].  
 SMITH: Richard Harold, 11, Montrose Avenue, Redland, Bristol [Masters: Messrs. Foster & Wood\*].  
 SMITH: Osgood, 87, Hanley Road, Crouch Hill [Master: Mr. George Low\*].  
 HITCHCOCK-SPENCER: Edward Napier, Odsey Grange, Ashwell, Herts [Master: Mr. J. A. Cooke].  
 HORN: David, 95, Fitzjohns Avenue, N.W. [Masters: Messrs. Roe\* & Richards Julian\*].  
 GREEN: James Jameson, 10, Riversdale Road, West Kirby, Cheshire [Masters: Messrs. C. O. Ellison & Son].  
 WARE: Edgar Felix, Idlesleigh House, Heavitree Road, Exeter [Master: Mr. A. H. Tiltman\*].  
 ANDREWS: Samuel Percy, 25, Castle Street, Hertford [Master: Mr. James Farley].  
 GRANT: Frederick Thomas, 7, Hastings Rd., Maidstone [Masters: Messrs. Ruck & A. W. Smith\*].  
 MEAGHER: Jeremiah Joseph, 76, Leinster Road, Rathmines, Dublin [private study].

The asterisk \* denotes members of the Institute.

These gentlemen have been registered as *Students R.I.B.A.*, thereby increasing the number already on the register to 88, as against 41 last year, and 17 in 1891. The "Testimonies of Study" submitted by Messrs. Chatterton and Scorer will be shown at the Exhibition of Prize

Drawings which is to be held at the Institute in the month of January.

### The Qualifying Examination (Associate).

The President, in continuance of his announcement of the results of the recent Intermediate Examination, stated that sixty-nine applications had been received for admission to the Examination qualifying for candidature as Associate, twenty-one of whom had been relegated from previous Examinations; and that the Board of Examiners had admitted fifty-eight. The remainder (11) were rejected because the Probationary work which they had submitted was below the required standard of excellence. This Qualifying Examination commences on Monday, 27th inst., in London and Manchester, and lasts the entire week.

### The Appellate Tribunal.

In consequence of the decision in the case of *The Queen v. The Members of the Appellate Tribunal* [reported p. 27], by which the High Court granted a *certiorari* to set aside a decision of the Appellate Tribunal on the ground that Dr. Longstaff, one of the members, was chairman of the Building Act Committee which had ordered the prosecution, and was therefore biased, the Committee have recommended the London County Council to appoint Mr. Thomas Eccleston Gibb, Clerk to the Vestry of St. Pancras, to fill the place of Dr. Longstaff on the Tribunal.

### Proposed Consolidation of the Building Acts.

The London County Council have given notice of their intention to apply to Parliament during the ensuing session for leave to bring in a Bill, the general object of which is to consolidate in a simpler form the statutes now in force regulating the management, formation, and laying out of streets and roads, and the construction, alteration, and control of buildings. To effect this object it is proposed to repeal all existing enactments in any public or local Act relating to these subjects, or some of such enactments, in order to substitute a new, enlarged, and amended code of law applicable to streets and buildings in London, to be embodied as far as practicable in a single Act. Among the subjects proposed to be dealt with are streets and ways, buildings and structures of every class and description, the rights of owners with respect to building or adjoining properties, rights of light, provisions as to new buildings, protection against fire, the appointment and control of district surveyors, the appointment of the Superintending Architect and appeals against his decisions, dangerous and neglected structures, dangerous, noxious, and offensive businesses, &c. Provision is to be made for the establishment of a tribunal to act as a Court for the hearing of appeals in relation to orders and rules of the



County Council, and with respect to matters arising under the Act.

**The late Heinrich Lang** [*Hon. Corr. M.*].

News of the death of Heinrich Lang, which occurred on the 4th of September last, was conveyed to the Institute on the 8th ult. by Dr. Josef Durm, Professor at the Technical High School of Karlsruhe, who kindly forwarded copies of the *Karlsruher Zeitung* of 7th and 8th September, from the biographical sketch in which, translated by Mr. Beazeley, Librarian to the Institute, the following notes are taken.

Heinrich Lang was born at Neckargemünd 20th December 1824, and educated at the Heidelberg Upper Grammar School, subsequently attending the Polytechnic School at Karlsruhe, and, after passing the examination for the third mathematical class, the four years' course at the School of Architecture, during which period he passed the necessary educational test for the State examination. On 1st November 1846 he was appointed, on probation, assistant instructor at the School of Architecture, and his architectural ability subsequently procured him a place in the office of Eisenlohr, whose star was then in the ascendant. A bright and youthful freshness at that period pervaded the architectural world of Baden, Eisenlohr's poetically-conceived railway-stations, Hübsch's great monumental works in the capital, his churches in the provinces, the grandeur and breadth of conception of his restoration of the cathedral at Spire, attracting many architectural disciples, arousing a spirit of emulation, and setting a brilliant example to students.

After duly passing the State examination he received his certificate as a practising architect in 1850, but continued to act as assistant instructor on probation in the School of Architecture, a post he filled so satisfactorily that in 1852 he was permanently appointed, becoming Professor in 1855. In 1868 he was elected Honorary Corresponding Member of the Royal Institute of British Architects, and in the same year was appointed Assistant-Commissioner of Works and Public Buildings, becoming a Chief Commissioner in 1878. In 1880, on Hochstetter's decease, he became Principal of the School of Architecture, an appointment he retained to the end of his busy and active life. In his capacity of academic instructor he was three times elected Director of the Technical High School, and under his administration that institution reached its highest perfection. In 1880 Lang was appointed by the German Emperor Member Extraordinary of the Academy of Architecture at Berlin; and in 1881 the oak-wreath of the Order of the Lion of the First Class was conferred upon him.

As a practical architect his numerous buildings bear witness to his professional genius. His chief practice lay in school-architecture, wherein

he skilfully combined the features required by hygiene with those belonging to art. Discarding the jejune and meagre style formerly prevalent in buildings of this class, he gave the sister arts of painting and sculpture a due share in their design, with a view of educating and ennobling the taste of the rising generation. Numerous schools at Karlsruhe, and the grammar schools at Freiburg, Ettenheim, Ettlingen, Durlach and elsewhere were the creation of his genius, as well as the various University buildings at Freiburg and Heidelberg; and the Technical High School owes some of its buildings to him. To these works might be added a long list of business premises, hotels, dwelling-houses and villas, of which the most important are Model's establishment in Karlsruhe and the Victoria Hotel in Baden. The towers of the Protestant church in the latter city were designed by him from sketches by Eisenlohr. He took a successful part in competitions, and was a constant contributor to the professional journals.

**Books and Pamphlets received.**

Mr. Henry Faija has presented to the Library *Normandy, its Gothic Architecture and History*, by Mr. F. G. Stephens, an octavo volume published in 1865, and embellished by twenty-five photographs from notable Gothic buildings in Rouen (including three views of the Cathedral), Caen, Mantes, Bayeux, and Falaise. From Adelaide Mr. Edward J. Woods has forwarded an illustrated pamphlet on *The Ventilation of Buildings*, being a reprint of a paper read by him before the South Australian Chamber of Manufactures in November last, and containing an explanation of the elaborate system of ventilation that the author has lately carried out at the new Houses of Parliament, Adelaide. Mr. F. C. Penrose has presented a part of the *Philosophical Transactions* of the Royal Society, being a paper by himself *On the Results of an Examination of the Orientations of a Number of Greek Temples*, which was read before the Royal Society last April. *Some Aspects of Lubrication*, a pamphlet, by Mr. J. Veitch Wilson, has been received from Mr. Beazeley, Librarian of the Institute. The Secretary to the Government of India (Calcutta) has sent *Notes on an Archaeological Tour through Ramannadesa*, by Taw Sein-Ko, who gives in a quarto pamphlet the results of his explorations in the country which constituted the ancient Talaing kingdom of Ramannadesa, undertaken with the object of elucidating the history of the places mentioned in the Kalyani inscriptions. *The Great Palace of Constantinople*, a translation by Mr. William Metcalfe from the Greek of the late Dr. A. G. Paspates (Alexander Gardner: Paisley and London), has also been added to the Library. The general and sectional reports of the International Maritime Congress, the second meeting of which was held this year in London under

the presidency of Lord Brassey at the Institution of Civil Engineers, has been received (Unwin Brothers: London). The meetings of the Congress for the reading and discussion of papers were held in four sections, and in the publication a volume is devoted to each. *Archæologia Oxoniensis*, part iii. (Henry Frowde: Oxford & London), contains three papers as well as notes on recent archæological discoveries, and a list of books added to the Bodleian Library since October 1892. Messrs. Crosby Lockwood & Son have forwarded a much-wanted book, just published by them, entitled, *Concrete: its Nature and Uses*, by George L. Sutcliffe, of Manchester, an Associate of the Institute, who passed his examination in 1890.

Under the head of "Monographs of New Buildings," in the Chronicle of the last issue of the JOURNAL, it was inadvertently stated that the monograph of the new building for the Institute of Chartered Accountants was published by Messrs. Whittingham & Co., of the Chiswick Press. It was printed by that firm, the publisher being Mr. B. T. Batsford, of the well-known house in High Holborn.

## REVIEWS OF NEW BOOKS. II.

(3.)

### ART TREASURES.

*Der Formenschatz*, 1891, 1892, 1893, Nos. I. to VIII. 40. Munich & Leipzig. Price 1s. 3d. each part. [Georg Hirth, Munich; and Messrs. Williams & Norgate, 14, Henrietta Street, Covent Garden, W.C.]

We are indebted to the publishers for the contribution of the parts of this work as they have appeared, month by month, for now nearly three years. Each part contains about sixteen plates, produced by a photogravure process from various art objects in promiscuous order. It is bare justice to say that many of the plates are above the average in excellence of definition, choice of lighting, and completeness of representation. The subjects are selected at large from all the walks of art, pictorial, glyptic, or "applied." The volumes form, in fact, a museum through which the spectator wanders, with eye roaming from picture to cabinet, jewellery, ceramics, sculpture, needlework; all in most unexpected variety; a succession of beautiful objects, many rendered with admirable fidelity, without order or classification. There is no letterpress, except the index, which is threefold—one, numerical, following the order of the plates; a second arranged by classes of subject; and a third by names of the masters whose works are illustrated. In a short notice of the early numbers of the work (in August 1891) I pointed out that it would be an advantage to have on each plate some brief, descriptive title; and to forego the repetition, on each plate, of the title of the whole work. The latter repetition is a distinct disfigurement; and the titles to the subjects are often not at all ex-

planatory. Take the first plate in the first number for 1893. This is an excellent representation of the marble torso of a Satyr from the Uffizi at Florence. But, instead of inscribing on the plate any of this information, the word "Antiquité" is repeated in two languages, and "Der Formen-schatz" in four—so that all we learn out of more than ten words of inscription is that the object is an antiquity. The publisher does himself an injustice in thus "balking his customer"; for, with plates thus promiscuously arranged, it is of the first importance to see at once what each represents. Moreover, the plates are really too good to be defaced by so many dissected fragments of prominent inscription. The double plate, 3 and 4 (1893), a facsimile of Andrea Mantegna's print of "a battle of river-gods," is first-rate. I may note that two original and varied drawings by the master, for the subject of this plate, are preserved at Chatsworth. Many of the plates show admirable examples by the great ornamentists of Italy, Germany, and France; examples which, when thus brought together, serve only too well to prove how superior to even the best moderns, those men were in the spontaneity, arrangement, balance, grouping, and grace of line of their compositions in pure ornament. Let any one turn over a few of these pages, note the sense of accomplished intention, "completeness," in each of these examples (whatever the style), and carry that recollection with him to the "Arts and Crafts" Exhibition, with its too evident struggles to attain—what? Is it beauty and grace of line, or is it a certain quaint association with some bygone time that is the main object? At any rate, the "repose" that results from perfected completeness (even with great elaboration) is very rarely to be met with in modern ornament, though it have much that is in other ways admirable.—J. D. CRACE.

(4.)

### TWO PRIORIES.

*Christchurch, or Withepole House: a Brief Memorial*. By John Shewell Corder. Ipswich, 1893. Price small paper edition 1s. 6d.; large paper 10s. 6d. [Mr. S. H. Cowell, Buttermarket, Ipswich.]

*An Exact Account of the Church and Priory at Goring in the County of Oxford*. By Percy Goddard Stone, F.R.I.B.A. 80. Goring, 1893. Price 2s. 6d. [Mr. Henry L. Smith, Post Office, Goring-on-Thames.]

Mr. John Corder is already well known as an enthusiastic and, withal, a most careful delineator of all that is picturesque in the architecture of East Anglia, and in this fine old house he has found a congenial subject, and illustrated it excellently both with pen and pencil. Christchurch Priory, known afterwards as Withepole House, and now again as Christchurch, is just within the town of Ipswich, though for many centuries it stood by itself in the country, and still retains in the park behind it a substantial reminiscence of its old demesne. Of the buildings of the religious foun-

dation, which was a house of Austin Canons, founded about A.D. 1170, nothing is left standing, the demolition following the suppression of the priory having been unusually complete; but though the original buildings disappeared, on their site, and in part from their materials, a large manor-house was erected within the space of a very few years, which, remaining as it has in a very perfect state to the present day, has now become invested with considerable architectural importance. As Mr. Corder remarks:—"In design 'Christchurch mansion is especially interesting' as marking the epoch when the somewhat rigid 'lines of the Tudor were beginning to be toned down and modified by the freer treatment of the 'Elizabethan era, the approaching advent of 'which is indicated in several small matters of 'detail.' The house thus built in the reign of Edward VI. underwent great repairs and some alterations during that of George II., but the bulk of the old building was left intact, and the new work has harmonised with it remarkably well, while since that time nothing has been done to disturb its time-honoured aspect.

The book contains a complete history of the priory and the manor-house, together with much genealogical and biographical information about its successive owners; also a minute description of the buildings in their present condition, with a series of ten photo-lithographic plates of plans, details to scale, and perspective sketches, all from the author's own drawings. The latter should be specially praised, being accurate without being over-laboured, and showing exceedingly well the picturesqueness of the place without shirking or slurring over the details necessary to an understanding of its architectural character. The old house seems to have fallen at last on evil days—its doom may even by this time have been pronounced—most fortunate is it, therefore, that such a capital record of it should exist. Work of this kind is generally a pure labour of love, but its usefulness is inestimable; and it is earnestly to be hoped that other workers like Mr. Corder may come forward, until there does not remain an ancient building in any county of England unillustrated and undescribed.

A valuable piece of work, both for its light on architectural and on social history, has been done by Mr. Stone, in the publication of his recent researches on the site of the little-known Priory of Goring-on-Thames; and he has succeeded, from what might have been thought very scanty materials, in compiling a most attractive book. Many people know well enough the quaint little church of Goring, so charmingly situated in the prettiest spot of the whole course of the Thames; very few, probably, have even guessed at the former existence there of the convent, of which it once formed part. Even keen and observant visitors to the church, while doubtless noticing

that it contained puzzles, and had, so to speak, something odd about it, can have gleaned but little concerning its true character and history; since every vestige of the actual "Nuns' Church," of which the present parish church was the nave, as well as of the other conventual buildings, was completely hidden underground, and their very memory nearly lost, until just now revealed by Mr. Stone's persistent and fortunate labours of the last two years.

Systematic excavation has resulted in the tracing of the whole plan of the Priory buildings, which, elucidated in Mr. Stone's book by every attainable piece of documentary evidence, and by a comparison of the plans of similar small nuns' priories, enables us to picture in considerable detail a distinct and notable phase of mediæval life. The thoroughness of the modern school of antiquaries, as compared with the monument-hunting race of the last century, is well exemplified by the difference between the work contained and described in this book and that accomplished on the same spot even by so eminent a man as Hearne, whose interest seems to have been bounded by what Mr. Stone happily describes as "the usual gruesome 'delight of the period in sepulchral archæology.'"

The Nuns' Church at Goring (which absorbed a previously existing Norman parish church, now again standing alone) is shown to have been mainly of the Lancet-Gothic period: very few worked stones belonging to it could be discovered, but the excavations produced a great number of encaustic floor-tiles, dating mostly from the thirteenth century, and of unusual excellence. Of these no fewer than twenty different patterns and devices are figured and described, remarkable not only for their design, but for their rich and varied colouring, comprising, besides the ordinary arrangements of white or yellow on a red or brown ground, such combinations as white on grey and on yellow, two yellows together, yellow on various shades of green, and even one tint of green on another. It is satisfactory to note that these tiles have been carefully preserved, Mr. Stone having pieced them together, and inserted them in the wall of the vestry of the present church.—ARTHUR S. FLOWER.

(5.)

#### SLUMS AND ROOKERIES.

*London Rookeries and Colliers' Slums: A Plea for More Breathing Room.* By Robert Williams, A.R.I.B.A. Price 1s. [Mr. W. Reeves, 185 Fleet Street.]

That Mr. Williams has devoted much thought and sympathetic pains to the subject about which he has written nobody will deny, and his alleviating plans have the merit of being thoroughly practical and well studied. This being so, it is the more to be regretted that he has followed in the footsteps of falsely so-called "Social Reformers," and thus marred what should have been strictly an architect's criticism on architectural blundering in

provision of homes for the poorer classes, with suggested amendments thereon. For example, whilst all will agree with him in condemning the barrack-like blocks of six and seven-storey high dwellings, with their attendant risks in case of fire, and their heavy tax on the weary toiler in ascending to their dreadful heights, there could be no necessity to echo the absurd cry about the wicked ground-landlord which pervades some pages of Mr. Williams's book. Why should not any owner of land turn it to the best advantage from his own point of view, and why should he remain one day longer than he chooses in any particular part of either town or country? I never hear of lessees paying more rent to the ground-landlord than is inserted in the lease, and why should the ground-landlord be held up to obloquy because he does that which he is perfectly entitled to do—i.e. get the best value he can in the best market? What we have rather to consider is how to frame laws which, whilst avoiding confiscation on the one hand, shall provide for the health and general well-being of the community at large on the other.

Mr. Williams gives on page 15 a sketch showing an "example of crowding by deliberate street "planning," and it is to be hoped that his painstaking statistics will prevent, for example, the further development of such "developments" as he shows in a block between the Whitechapel Road and Fieldgate Street (figs. 7 and 8), and in the plans and sections following (figs. 10, 11, 12, 13, 14 and 15); but he must rather blame the Act of Parliament than the owners of the land for the want of breathing space which he clearly shows. Notwithstanding, however, the many what I conceive to be blemishes of his book—chiefly by reason of his support of the new doctrine of spoliation—Mr. Williams has done good service in publishing it, and I should much like to see a trial of his skill given by an order to erect a few of the well-planned "pair of colliers' homes" illustrated on his page 73.—WM. WOODWARD.

(6.)

#### INDIAN ARCHEOLOGICAL SURVEY.

*South-Indian Inscriptions, Tamil and Sanscrit. Edited and Translated by E. Hultzsch, Ph.D. Vols. I., II. Madras, 1890-2.*

*The Epigraphia Indica of the Archaeological Survey of India. Edited by Jas. Burgess, LL.D., C.I.E., assisted by A. Führer, Ph.D. Vol. II., Part XIII. Calcutta, 1893.*

Dr. Hultzsch was appointed Epigraphist to the Government of Madras in 1886, and already he has produced two volumes, in four separate parts, of inscriptions with translations. These have been presented to the Institute by the India Office. Some of the inscriptions are in Sanscrit, but the most of them are in Tamil. A few of these are copper-plate grants, but the greater number are inscribed on pillars, niches, and walls of temples. On such records it might have been expected that some

reference to the architecture of the region would have been found. This is not the case. It would have been of great value to have discovered even the slightest hint regarding the origin of the temples peculiar to the South of India. Many of these are large establishments, and enclosed within walls, which cover a considerable space of ground. Within these places there were generally a number of temples with halls and tanks, besides houses in which the Brahmins lived, as well as accommodation for the temple nauteh-girls, attendants, and servants of all kinds; many of them were so large that they might be looked upon as small towns. The inscriptions record grants of villages with land and money to the temples; the gifts to the Rajarajesvara Temple at Tanjavur—or Tanjore—appear as something fabulous. Immense quantities of objects in gold are recorded as having been given to this temple. These include figures of gods, bowls, vases, umbrellas, ornaments, girdles, bangles, pearls, and precious stones of all kinds. There are pages following pages of lists describing these precious articles. If the inscriptions tell nothing about the architecture of the temples, they at least give us a glimpse of the vast wealth that must have been hoarded up in them. The inscriptions are of most value to those who are working out the past history of India, as they give details which assist in filling up the lists of the various dynasties; they also supply dates, and in that they are of use in following out the progress and development of the various architectural styles. To this it may be added, that at times, where the old names of temples have been lost, they are now found in these inscriptions. When Fergusson was writing his part of the *Cave Temples of India*, he found great difficulty in knowing what name to give the place where the Seven Pagodas stand. This is on the seashore about thirty-five miles south of Madras. Out of a number of names he selected "Mahāvallipur"; Dr. Hultzsch now finds from the inscriptions that its correct name is "Māmallapuram." Dr. Hultzsch's notes, as might be expected, deal with the historical bearings of the inscriptions; but he makes one reference to a temple which is important. It is that when Dr. Burgess visited the comparatively insignificant temple of Kailāsanāthasvāmin at Kāñchipuram—Conjeveram—he discovered that it was built in the Pallava style of architecture, and that it belongs to the sixth century A.D. This is an early date for a constructed temple in India, and it will probably go far to establish the period to which Fergusson ascribed the Seven Pagodas, which was to the same century.

The *Epigraphia Indica*, part xiii., vol. ii., gives a series of new readings of the Pillar edicts of Piyadasi-Asoka, by Dr. Bühler. Asoka, whose date was about the middle of the third century B.C., ruled over the whole of India, from the Peshawer Valley to Madras, and from the Hima-



layas to the western point of Gujarat. Over this wide space he caused edicts of a religious and moral character, and intended for the benefit and happiness of his subjects, to be engraved on pillars, and on rocks. The pillars are called *Lāts*, a word that means "Staff," or "Walking Stick;" the best known of these being the one in the Fort at Allahabad, and Firoz Shah's *Lāt* at Old Delhi. These old *Lāts* now form a series of important monuments in relation to the ancient architecture of India. As Asoka became a convert to Buddhism, and is often described as the Constantine of that faith, these inscriptions have been interpreted up to the present as expressions of Buddha's teaching. The exhortations which they contain against taking animal life have been looked upon as satisfactory evidence of this. Dr. Bühler now affirms "that Piyadasi-Asoka had not joined the Buddhists when the Pillar edicts were completed." His conversion did not take place till the twenty-ninth year of his reign. "Up to the end of his 'twenty-seventh year the king continued to preach 'and otherwise to work for the spread of that 'general morality which all Indian religions, 'based on the *Jñānamārga*, or Path of Knowledge, prescribed for the people at large, and 'which was common to the Brahmans, Jainas 'and Buddhists." Fergusson, going upon the received theory that Asoka was a Buddhist, and that the inscriptions were edicts of that faith, naturally included the *Lāts* in his classification of Buddhist architecture. A more rigid classification may rank them as pre-Buddhist.—Wm. SIMPSON.

## NOTES, QUERIES, AND REPLIES.

### The London Council's Proposed Bill.

In connection with the proposal [p. 50] to bring in a Bill having for its object the consolidation of the various statutes in force relating to the management of the Metropolis, it appears to be in contemplation to introduce the measure into the House as a private instead of a public Bill. The matter would therefore be dealt with in the ordinary course of things by a small Committee, instead of the whole subject being freely discussed before a numerous Select Committee, as would be the case if it were introduced as a public Bill. The suggestion that a measure, dealing so largely with the concerns of this great city, and affecting as it does the rights and interests of individuals in all matters connected with building operations, should be introduced as a private Bill demands serious consideration, especially by members of the Institute.

### Proposed Systematic Testing of Bricks & Brickwork. From the Science Standing Committee—

During the past Session the question of instituting a series of practical and authoritative tests, and establishing reliable data as to the relative strength of bricks and brickwork, has been brought

before the Science Committee by Mr. Burrows, one of its members. At the present time there is no accurate information available upon the matter, which, while of no great moment in respect of the brickwork of domestic or ordinary buildings where the bases of walls are of ample dimensions, becomes of enormous importance when great weights have to be supported upon a limited base, as in the case of piers to carry the floors of lofty warehouses for heavy materials, and the possession of exact knowledge upon the subject should be fully appreciated by the architectural profession. The Science Committee referred the subject to a sub-Committee, composed of Messrs. Burrows [A.], Faija [H.A.], and William C. Street [F.], and they have made a preliminary report descriptive of the need of investigations and of the manner in which it is proposed to conduct them.

P. GORDON SMITH.

The sub-Committee's report is as follows:—We have carefully considered the question submitted to us in regard to this proposal, and beg to submit the following suggestions for your consideration.

It has been shown that the resultant strength of brickwork is much less than we should be led to expect by a study of the actual powers of resistance to crushing of bricks alone, and the object of our proposed inquiry is an endeavour to ascertain the ratio between the strength of bricks and of the same bricks when built in walls or piers.

An extensive series of experiments is not required to enable us to establish a constant by which, from the *known* strength of any particular brick, we could calculate the amount of diminution in strength produced by the introduction of cementing materials of *known* quality and composition. Our experiments, therefore, should be directed to the establishment of the ratio subsisting between the original strength of the bricks and of the brickwork formed of the same material, or, in other words, the diminished resistance to crushing due to jointing and bedding.

To effect this we consider it necessary to experiment upon at least three classes of cementing material, viz.:—(a) lime and sand, (b) hydraulic lime and sand, and (c) cement and sand, each mixed in the proportions considered relatively suitable; and upon at least two classes of bricks, viz., those with and those without frogs.

To eliminate as far as possible all chance of error the testing should be in duplicate or triplicate in each case, and it should be carried out upon piers of at least two bricks square, properly bonded so that a fair number of mortar joints *would* be submitted to the test, and the piers should be of a suitable height, and of the same dimensions, so that comparative results *may* be obtained.

To prevent as far as possible any chance of disintegration of the joints by moving the piers, we suggest to construct them on cast-iron bases, about 2 inches thick, so that they need not be



removed from the foundation on which they were originally built for testing.

The testing should be made at suitable intervals after the construction of each pier—say at the termination of 3, 6, 9, and 12 months from the date of building.

The construction of the piers and the subsequent testing should be carried out in the presence of some of the members of the Science Committee, and accurate notes of the particulars of bricks, cementing materials, and results of testing, should be properly tabulated somewhat in the manner proposed in the tables appended.

For the guidance of the Committee we venture to suggest the following method of procedure:—

(1) Test the bricks to ascertain the resistance to crushing alone without cementing material, noting the particulars as shown in the appended Table (A).

(2) Test the cementing material for tensile strength, carefully describing the exact nature of the ingredients, and the proportions used, as shown in Table (B) appended.

(3) Construct the piers all of the same size and height, 18" x 18" by, say, 6 feet high (equal to twenty-four courses at least), and in the manner shown in Table (C), noting the particulars as per Table (D).

(4) Test the piers and record the results as per Table (D) appended.

**Table (A).—Particulars as to Bricks.** (Index No. to each.)

Name and address of maker.	
Name of brick.	
Quality or variety.	
How made	{ Hand, kiln, clamp, machine, pressed, dressed, wire cut, or polished.
Size	{ Length. Breadth. Thickness.
Frog	{ How many. Shape of. If plain or barred.
Colour.	Specific gravity.
Weight	{ (a) When dry. (b) After soaking in water for three days under a head of 22 feet.
Date of test for crushing strength.	
Authority for crushing strength.	
Load required to crack the brick, in tons, per brick, per square foot.	

Add information as to clay from which brick is made, geological formation, chemical constitution, &c., if ascertainable.

**Table (B).—Particulars as to Cementing Materials.** (Index No. to each specimen.)

Cement and hydraulic lime and lime.	{	Maker's name and address.
	{	Weight.
	{	Residue after sifting at various sizes.
	{	Tensile strength after 3 days.
Sand	{	Initial set. " " 7 "
	{	Expansion or contraction.
	{	Pit or river.
Proportion of cement or lime to sand.	{	Washed or unwashed.
	{	Coarse or fine.
	{	Quartzose or felspathic.
	{	Size of grain.

**Table (C).—Method of constructing Piers.** (Index No. to each.)

	Wire cut (no frog)	Pressed, &c. (with frog)
For 3 months' test.	{ 1. In lime. 2. " hyd. lime. 3. " cement 1 to 3. 4. " cement 1 to 5.	{ 1. In lime. 2. " hyd. lime. 3. " cement 1 to 3. 4. " cement 1 to 5.
For 6 months' test.	{ 1. In lime. 2. " hyd. lime. 3. " cement 1 to 3. 4. " cement 1 to 5.	{ 1. In lime. 2. " hyd. lime. 3. " cement 1 to 3. 4. " cement 1 to 5.
For 9 months' test.	{ 1. In lime. 2. " hyd. lime. 3. " cement 1 to 3. 4. " cement 1 to 5.	{ 1. In lime. 2. " hyd. lime. 3. " cement 1 to 3. 4. " cement 1 to 5.
For 12 months' test.	{ 1. In lime. 2. " hyd. lime. 3. " cement 1 to 3. 4. " cement 1 to 5.	{ 1. In lime. 2. " hyd. lime. 3. " cement 1 to 3. 4. " cement 1 to 5.
16 piers.		16 piers.
16 duplicates.		16 duplicates.
32		32

32 piers without frogs,  
32 piers with frogs.

Total 64 piers.

**Table (D).—Particulars of each Pier.** (Index No.)

How constructed	{ (a) In mortar. (b) In cement.	Weight. Plan of Courses. Number of Courses. Date of building. Date of testing. Authority for testing.
Size	{ Height. Width. Width.	

## NOTES.

### Ancient Roman Mortar.

From E. P. LOFTUS BROCK, F.S.A. [F.]

It is not infrequently stated or implied by writers, and believed by many observers of our ancient buildings who ought to know better, that no mortar can be of ancient Roman date unless it is formed with powdered brick. A red or salmon colour is at once accepted by this class of observers as indicative of real Roman work, and any other description is rejected as being of later date. There can hardly be a greater mistake. Roman mortar is as varying in its component parts as it is in its goodness; for it is certainly not all mortar of Roman date that is flint-like in its hardness.

Almost all the domestic buildings executed in England, villas and such-like, were built with very poor mortar, usually formed of chalk lime, which goes to pieces after a frost or two whenever buried work laid bare by excavation is so left without being covered over again.

There is a good example of the use of mortars of very different composition in a single building that may be well to indicate in this brief note. The Roman Pharos in Dover Castle will render evidence to an observer that it was designed with care and with fair regard to regularity. It is of solid and good construction, and it appears to be of moderately early rather than of late Roman

date. The facings are of squared blocks of what I have heard called Tufa, but which are of lime concretions formed of the cells of coralline-like insects, rather than being of volcanic origin or of brown colour. This material is found in several parts of Kent, and some from Leeds, in that county, is now before me, recently dug there. The facings are relieved with the well-known bands of red tiles. The regularity of construction and its appearance prevents any belief that the work was erected at different periods. And yet the mortar in one position is very different from that used elsewhere, all being fairly hard and good.

Mortar with pounded brick appears here and there only, sometimes to the blocks of facing, sometimes as if intended only for bedding the bands of tiles, sometimes even to the rubber filling-in. In one place a block of this red mortar has been built in as old material. Elsewhere, the mortar is formed of darkish brown gravel and sand. In another place the mortar is light-coloured, from the use of rather white sand and minute water-worn pebbles. At the level of four or five feet from the present ground the observer may trace all three descriptions of mortar in walking around the building. It is evident that during the construction various mortar heaps were mixed with whatever materials came closest to hand, and served up at random in whatever part of the scaffolding it was called for. It is of interest to note that in this building, as in others that might be cited, scored flue tiles and roofing tiles have been used in some few places instead of the more even bonding bricks, the wide and coarse joints, so usual in Roman works, readily allowing for a good deal of irregularity in the bedding. It may be added that, while the appearance of red mortar, as is so well known, is a pretty certain indication of Roman work, when it occurs, yet it is found also in some few mediæval buildings. I pointed out a patch or two formed of it, mixed with modern cement, in the ancient walls of Southampton, during the visit of the British Archaeological Association in August last, and at the first glance we thought it was Roman mortar adhering to stones removed from elsewhere.

#### The Hittite Style of Architecture.

From WILLIAM SIMPSON, R.I. [H.A.]

Hittite sculpture is now, to a certain extent, known from the few examples that have survived; but as none of the buildings of that people exist, we have nothing left to indicate their style of architecture. That they had a style of their own can now be shown from monumental evidence. In Vol. VI., the last published of *The Records of the Past*, edited by Professor Sayce, New Series, there is a translation, by Professor Robert W. Rogers, of an inscription of Sennacherib describing a number of his campaigns, at the end of which there are some interesting details about the buildings he

erected at Nineveh, and one of these was a new palace. The inscription states—

The place of the old palace I left,  
With earth from the river bed I filled it up.  
The tower ground I raised 200 *tipki*  
above the level. In a favourable month  
on an auspicious day I built on this foundation  
according to the wisdom of my heart  
a palace of *pilu* stone and cedar wood, in the style [?]  
of the HITTITES, and a great palace in the ASSYRIAN  
style [?]  
which far exceeded the former in adaptation,  
size and artistic excellence, through the work of the  
wise builders of my royal rule.

From this it may be assumed that the Hittite style must have had some merit and celebrity attached to it, when a mighty and victorious monarch such as Sennacherib, and his "wise builders," condescended to copy it for a royal palace. The reign of Sennacherib lasted from 705 B.C. till 681 B.C. There is another interest that may be attached to the words quoted above, and that is the introduction at that early date of a foreign style into the architecture of Assyria. On this head alone the point is worth noting.

A note in the first volume of *The R.I.B.A. Journal* [N.S. p. 117, note] explains that *pilu* stone was a species of white marble brought from Armenia. The name is derived from the Vannic *pulu-si*, which meant "engraved;" but more probably that should be rendered as "sculptured," and derived its name from having served this purpose.

#### Vitruvius's "Grecian House" and the Moderns.

From WILLIAM H. WHITE [F].

When, some sixteen years ago, I used to study daily for literary purposes in the Reading Room of the British Museum, taking notes from authors who have written on the houses of past ages, nothing amazed me more than the blind faith with which Perrault, Galiani, and Newton, and, in later times, the Abbé Barthelemi (author of the *Travels of Anacharsis*), Mazois, and even Becker, treat the rambling description left by Vitruvius of the Grecian House. Perrault and Galiani divided it into two peristyles—one of four porticoes for the men, and another of three porticoes for the women. Perrault placed the women's half next the street, and the men's half at the back of the house—as Vitruvius describes—so that it would have been necessary to pass through the parts reserved to the matron and her spinsters in order to reach the master's apartments. Galiani placed the two halves side by side, and gave each division an entrance from the street. Newton accepted Perrault's version, and they made the Grecian House described by Vitruvius a palace with a frontage to the street of about 275 feet and a depth of some 350 feet. The author of the *Travels of Anacharsis* did more. He evolved out of the Vitruvian text a modern mansion of about 360 feet square, with streets of 25 feet wide on three sides of it, and converted its *thalamos* into

a comfortable bedroom, 32 feet by 25 feet, with two windows looking on a garden. Becker, not being an architect, has dispensed with any formality of scale to his plan, but allowing a width of five feet to his entrance passage from the street, and three feet for the doorway, he shows an area of construction equalling the size of the Parthenon, which is modest in dimensions when compared with those of Perrault, Galiani, Newton, and others.

What remains in Athens to hint, however remotely, that the ancient city ever contained even a dozen houses equal to the magnificence suggested by modern scholars? In Xenophon's time (about the sixth century B.C.) it is extant that there were 10,000 houses in Athens—not improbable as houses now go in Asia Minor, India, and the East generally. Something is also extant of the attempts made by Themistocles to prevent the increase of building obstructions in the streets; and in the fourth century B.C. Demosthenes deprecated, in a celebrated oration, the efforts of any individual to outdo his neighbour by ostentatious building. Nevertheless, about 300 B.C., Dicaearchus said that Athens was full of small mean houses in crooked streets, and that "a stranger might doubt upon a sudden view whether this was really the city of Athens." Was the Grecian house of Vitruvius built after that date? If so, and if the house described by him was built in his time, can it be fairly called "Grecian"? Distance often lends enchantment to the view, and after lapse of years memory gives its size.

As learned commentators view  
In Homer more than Homer knew—

so the architects and historians of the last 250 years have endowed the ancient Greek with the results of all their accumulated experience; and the text, copied and recopied by mediæval scribes, of Vitruvius, who had never visited Athens, and whose description of the Grecian house was obtained at secondhand, has been treated by moderns with a respectful and almost religious fervour.

Mr. Falkener's essay is a practical contribution to the discussion of this subject. He gives the plan of a large Græco-Roman house—the house of Pansa—the walls of which are still standing; and, upon a similar plot of ground, in a like position, he constructs another house, not very much larger, from Vitruvius's imperfect description, the paragraphs of which he re-arranges in intelligible sequence. Unlike Perrault, Galiani, Newton, and others, who divided the Grecian House described by Vitruvius into two parts or peristyles, Mr. Falkener constructs it of three divisions: (1) the Vestibulum, which forms an entrance courtyard; (2) the Aula, or Hall, around which is arranged the living-house itself; and (3) the Peristyle, containing the various rooms described as being in such position. Obviously only a few such houses could have existed in Athens at a period when the

State lavished the wealth of the community upon monuments for everybody's use and delight, when public magnificence was the fashion—the State being everything, the individual relatively nothing.

### QUERIES.

#### 3. Brick and Concrete Walls.

From JOHN GETHIN [A].—

Annexed is a specification of what I believe is a new kind of walling, which I have successfully

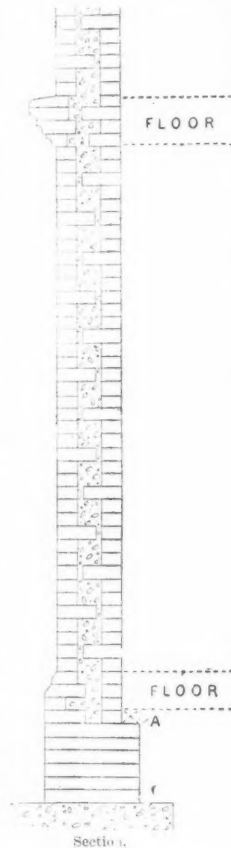
used for external walls in exposed positions in Wales. I shall be much obliged if anyone will kindly let me know if he has heard of such walls being used before. If not, I shall be pleased to send further particulars.

I claim for these walls,

(1) that the cost is about the same as a solid brick or stone wall; (2) that they are perfectly watertight, and that they may even be used for storage tanks; (3) that they may be made of any thickness above 9 inches; (4) that they will not harbour vermin, as is the case with hollow walls; (5) that they are much cheaper than ordinary concrete-backed walls, no staging being required; (6) that bricks of unequal thickness may be used for the front and back linings, which is often an advantage; (7) the concrete adheres so strongly to the brickwork that it is almost impossible to get out a brick except in pieces. At A is a damp-proof course.

*Extract from Specification.*—The whole of

15-inch exterior walls to main building to be faced with Cattybrook wire cut bricks, built in Flemish bond, and pointed in black mortar. One header in every six to tail into walls, the other headers



Section 1.



Plan of Damp-proof Walls used in a house at Penarth.

being snap headers. Line the inside of wall with  $4\frac{1}{2}$ -inch brick with through headers. The 6-inch cavity thus formed with these two  $4\frac{1}{2}$ -inch walls

to be filled in with concrete, to be composed of one part of Dragon cement (obtained in South Wales) to five parts of clean sharp fresh-water sand and hard burnt vitrified clinkers or approved rough gravel, the proper proportions of cement and gravel being measured in roughly-made boxes.

#### 4. "Ignorance concerning Woods."

In a Paper bearing the above title, and read at the International Forestry Congress at Chicago, architects are severely criticised for ignorance concerning woods. They can tell us, says the author, about the wearing quality of different stones, the crushing strength of this material and that, but when it comes to any specific knowledge of the "lumber" used inside of our houses for doors, casings, floors, and possibly ceilings—objects which are constantly before our eyes—they are woefully ignorant. When furnishing a fine house you select colours to carry out a general idea of harmony. If the upholstering of the furniture, the carpets, or the *portières* were to turn another colour the harmony would be destroyed. So it may be destroyed through the architect's lack of knowledge. Were the question asked: I desire to finish my dining-room in one kind of wood, my reception-hall in another, my library in another; and, as these rooms are practically one, what woods shall I use in order that the harmony may be preserved after the house shall have been in use for years?—the author of the Paper ventures his opinion that few architects could answer such a question; that too little attention is paid to these vital points, which are most intimately connected with the business of the architect, and should be regarded as part of it.

Under the head of "Timber (as Material)" in the Institute Library Catalogue, is a list of a few books, pamphlets, and Sessional Papers, bearing date from 1835 to 1881, but they are relatively unimportant. It would be desirable to obtain, from members and others information, respecting recent books on the subject of "Woods," and of museums or schools in which specimens are collected for exhibition and study.

#### 5. Novel Fire Protection.

An American journal recently called attention to a device for the protection of shingle roofs from fire which is being introduced in some of the cities of the United States. It consists of nothing more than a water pipe running along the ridge-board of the roof, and connected with the water surface of the building. The roof pipe is perforated at short intervals, so that at a moment's notice the roof can be flooded and rendered impervious to sparks and blazing fragments blown from burning buildings in the neighbourhood. The device is stated to be at once so simple and effective, that one wonders why its introduction was not coeval with that of water-mains and hydrants.

Has any invention of the kind been patented, or has a similar appliance ever been tried, in this country?

#### REPLIES.

##### 1. Helmingham Hall [p. 25].

From H. D. SEARLES-WOOD [F].—

In response to the query in the last issue of the JOURNAL, I think it may interest some readers to know that the Architectural Association visited Helmingham during its annual excursion this year, Lord Tollemache having kindly given us permission to visit his house and sketch any features of architectural interest. The house is a quadrangular structure, and has a very interesting courtyard in the centre, built about the reign of Henry VIII. The rooms have many of them been modernised from time to time, but they contain a most interesting collection of pictures and rare old books, and several musical instruments which belonged to Queen Elizabeth. The exterior of the house has been so carefully preserved that it seems rather to lack interest, although it is a most varied group of roof gables, chimneys, and mullioned windows. The moat which surrounds the house contains such excellent water that none other is used in the house to the present day, and the drawbridge has been raised every night since the house was built. Beyond the moat the charming gardens are also enclosed by formal canals and walls. When we arrived we were shown through the rooms by the steward, but were surprised to be told that no sketch or photograph was allowed to be taken of the interior or the courtyard. This probably accounts for the very few illustrations of an interesting house which, as stated, is well worth the attention of Architectural Students. It is to be hoped that, in the event of any of the Institute Travelling Students making an application to measure and illustrate the building, the Council of the Institute will support the application; and that Lord Tollemache will consent to relax his rule. The illustration in the *Excursions in the County of Suffolk* is of the exterior, and was drawn and engraved by T. Higham; and several illustrations of the exterior were published in the professional papers at the time of our excursion. Helmingham is also referred to, in the interesting article on the late Lord Tollemache, in the October number of *The New Review*.

##### 2. The R.I.B.A. Mottoes [p. 25].

Another Probationer has come to the rescue of the perplexed officer whose case was stated in the last issue of the JOURNAL, by forwarding the Institute motto translated thus—"For the Use of Citizens and the Decoration of Towns." But, alas! here are ten words where four were wanted. The Charter itself is only a little more prolix in declaring architecture to be "an art esteemed and encouraged in all enlightened nations as tending greatly to promote the domestic con-

"*venience of citizens and the public improvement and embellishment of towns and cities.*" Might "*Usui civium, decori urbium*" be Englished—"Civic Use, Urban Embellishment"? says a man in the street. But it is not happy. Mr. Justice Credulous would rather die of a dose of black arsenic than believe that four Latin words could bear a meaning so restricted as that of the abbreviated translation; and he would be right.

From ALLAN O. COLLARD [A].—

If the Probationer who perplexed an officer of the Institute could be induced to accept an abbreviated translation of the Motto, "*Usui civium, decori urbium*," in, I think, "terse, expressive, readable English," it may be found in the following rendering—"For Use and Beauty." The two words "*Cudi jussit*," on the Royal Gold Medal, are unimportant and superfluous, I venture to think, as the words "*Victoria Regina*," effectually indicate the Royal command.

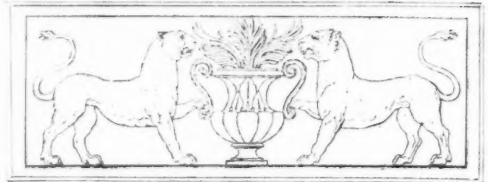
From PAUL WATERHOUSE, M.A. Oxon. [A].—

"*Usui civium, decori urbium.*" And so a Probationer has been asking for the meaning of our ancient motto. Fresh from examinations this Probationer becomes examiner, and calls upon the Institute to construe, nay, more, to take the four mystic Latin words and to supply four English equivalents. We have now a Notes and Queries column (of the composite order), and the officer to whom this "poser" was addressed has done well to transfer his grievance to our new and excellent vehicle of inquiry. The Institute at large has been entreated to gaze with the eye of intelligence on the ancient sentence which fortnight by fortnight appears upon its Friday breakfast-table. For once we are bidden to abate the ardour with which the inner contents of the JOURNAL are attacked, and to meditate on the words which we generally "take as read."

Some one, no doubt, is communicating to this very issue of the JOURNAL both a correct translation and a statement of the circumstances under which the motto was compiled or adopted; but I hope not. There are mysteries from which the veil should not be too rudely plucked.

The feat of translation into four words would, to be sure, be a linguistic achievement of such importance that to withstand it were corporate selfishness; but if that be withheld, let us cherish the blessed ambiguity of our oracle, let us each retain the right of reading into it our own meaning. That is the orthodox treatment of oracles.

Keep it wrapped in Latin, and it is all things to all architects. To one man it is a solution of the "art and profession" problem; to another it is mystic evidence of the harmony of the Useful and the Beautiful; to a third it breathes the comforting but fallacious assurance that if you will take care of the drains the architecture will take care of itself; and to a fourth, it is—Greek!



9, CONDUIT STREET, LONDON, W., 23 Nov. 1893.

## MINUTES. II.

At the Second General Meeting (Ordinary) of the Session, held on Monday, 20th November 1893, at 8 p.m., Mr. J. Macvicar Anderson, *President*, in the Chair, with 27 Fellows (including 9 members of the Council), 23 Associates (including one member of the Council), 3 Hon. Associates, and several visitors, the Minutes of the Meeting held 6th November 1893 [p. 26] were taken as read and signed as correct.

The Secretary announced that, as no requisition to take the votes for candidates for membership, whose names were announced in the last issue of the JOURNAL, had been received, the said names would be submitted for election (by show of hands) of Fellows and Associates present at the Business General Meeting to be held on the 4th December 1893; and the candidates' names were again read.

The following Fellows, attending for the first time since their election, were formally admitted and signed the Register of Fellows, namely:—John Flavel Curwen (Kendal) and Thomas Butler Wilson (Leeds).

The President announced the results of the Intermediate Examination held on the 14th, 15th, and 16th November 1893, and read the names and addresses of 15 Probationers [p. 50] who had passed, and were registered as students. The President made a further announcement respecting the Examination qualifying for candidature as Associate, to be held the next week in London and Manchester.

A Paper, by Mr. Falkener, on THE GRECIAN HOUSE AS DESCRIBED BY VITRUVIUS, was read in the absence of the author by the Secretary; and the Paper having been discussed, a Vote of Thanks to Mr. Falkener was passed by acclamation, after which the Institute adjourned, at 10 p.m.

## PROCEEDINGS OF ALLIED SOCIETIES.

### LIVERPOOL: OPENING MEETING.

On the 16th ult. the Opening Address of the session of the Liverpool Architectural Society was delivered by the President, Mr. Henry Hartley [F.], who began by reporting progress made in the educational scheme which was initiated at the Congress of the Royal Institute and the Allied Societies at University College, Liverpool, in the month of April last. A petition, signed by a large number of practising architects in Liverpool, had been presented to the Technical Instruction Committee of the City Council, begging their assistance and co-operation in the scheme, and intimating that in the event of the institution of a School of Architecture, they were prepared to promote its success by every means in their power, and to insert a clause in the articles of their pupils enabling them to take advantage of the special training which such a school would afford. The result so far had not been as favourable as the promoters anticipated; but there had been a distinct step in the right direction, the influence of which had not been lost. The President would, however, add a few thoughts of his own on what they could not fail to regard as a subject of the greatest importance and of practical value to their Society, with the object of inspiring all to



help forward a movement fraught with the best interests of their profession, if they were to fulfil their mission, and elevate a study and practice which ranked among the noblest and most exalted professions of their time. Architectural education was twofold. First, through the eye they were enabled to study and compare all those things that were so beautiful in Nature and in Art. Their conceptions were quickened as they gazed on and studied the glorious examples of the art of past ages, and their tastes refined as they realised in detail what made these works so noble and dignified, and what gave them that grace and finish which roused their deepest admiration. This was but one aspect of their educational process; the other, which was equally important, required them to gain by reading and book learning that technical knowledge necessary to fit them to bring to practical issue the visions and fancies which inspired them. Thus, the most beautiful design, unless based on the laws of proper construction, failed to inspire the beholder with appreciation of its truthfulness, and without a knowledge of construction, sanitary laws, the qualities and value of the materials at his command, the design of the architect failed to become a lasting memorial of his skill, or of practical value to the world, even if he could carry into concrete form what he had so skilfully designed with pencil and brush.

Then, although the mere training and skill in design, based upon the observation and study of their art monuments, could not fit even the most artistic student, with a soul full of exquisite dreams of beauty, to carry out his conception, if he lack technical skill, so, on the other hand, mere technical knowledge and learning culled from books might fill to overflowing the mind, yet without the artistic skill and power borne in upon the conception through the eye, the architect would fail to produce what was true and beautiful in art. Each method of learning must ever be sisters born, if man was to produce the true triumph of practical genius. Sang the poet:—

"Who can tell the triumphs of the mind  
By truth illumined and by taste refined?"

Ruskin, in his *Seven Lamps of Architecture*, at the outset discriminated in his own subtle reasoning between architecture and building; and as he proceeded with the definition of the two he observed: "It may not be always 'easy to draw the line so sharply, because there are few 'buildings which have not some pretence or colour of 'being architectural; neither can there be any architecture which is not based on building, nor any good architecture which is not based on good building.' This statement embraced in language both sharp and incisive what was meant by the twofold educational process which was necessary to fit the student to become a practical architect and not a mere dreamer. It was most difficult to define the dividing line between the two studies, but at least the very merging of the two into one, and their close relationship and contact one with the other, indicated that to become effective in their profession they must embrace in their study both the artistic and practical sides. Surely it was evident, therefore, that some systematic course of training was necessary, and suggested to them once more the urgent necessity of providing the would-be members of their profession with a means of obtaining sound and comprehensive education within easy reach, and conducted on such a system that academic studies might proceed side by side with that of observation and practice.

Lord Macaulay described architecture as an "art" which is half a science, an art in which none but a "geometrician can excel—an art which has no standard of grace but what is directly or indirectly dependent on 'utility.' Whether this was a truthful definition or not need not at present be considered; but it seemed self-evident that the true and successful architect must embrace a wider knowledge than the power to charm the eye with

artistic drawing, or than could be obtained by observation, independently of any training and technical study. Every building, besides being artistic and elegant, must be soundly and scientifically constructed; and beyond that, the architect in practice must have, at least in provincial practice, the knowledge necessary to enable him not only to direct the expenditure of his client's money, but also to give some account of the expenditure.

The President preferred not to enter into the controversy as to whether Architecture was a Profession or an Art, nor did he wish in any sense to rob architecture of its highest and noblest mission as the great exponent of Art; but he sought rather to enforce the true combination of both sides of architectural education, and to make it self-evident that the true architect must have the imaginative and artistic instinct trained and refined, as well as the collateral and practical sister scientific qualifications. The architect so educated had within himself the germs of success; and if all their rising men (that is to say, the young men of the profession) were placed in that position, their provincial towns might readily fulfil the utterance of an able writer when referring to the curriculum of one of the Allied Societies. "Who knows," he said, "whether the 'advance of architectural education in provincial centres 'may not one day assist in the erection of local barriers 'to metropolitan aggression. . . . and show that a result 'so desirable for local enterprise was attained partly by its 'wise endeavour.' . . . .

Nevertheless, they must not mistake what was meant by education. The mere passing of an examination—nay, the privilege of affixing certain envied titles after their name—did not of necessity make a competent and brilliant practitioner. It no doubt was, and must be, a guarantee indicating preliminary study and some degree of excellence; but such a man may be unimaginative, have few resources to aid him in the creation of things beautiful, and be so overbalanced by want of systematic study and well-directed training in any special department, that he may fail to accomplish the true mission of his profession. Indeed, it was impossible to examine and register the artistic capacities of a student, as they could the extent of his book learning and technical knowledge. What the President was striving to enforce, however, was not necessarily examination, but education—the former would no doubt of necessity follow—but not until the student had been systematically trained and well versed in every branch of artistic and technical knowledge. . . .

Education, moreover, had a deeper and more subtle mission than the mere acquisition of facts, and the training and cultivation of the eye and fancy so as to fit a man to earn a good income by his profession. The study of the fundamental laws and history of Architecture, and a deeper and more intimate acquaintance with her origin, progress, and development, and all the charms and mysteries of her life, must and would inspire the student to regard her with a more reverential devotion, and with a more intense desire to be her true and faithful champion and knight, and to defend her from what was unworthy, untruthful, or degrading. The more closely he was brought in contact with her, the more he must honour her; and surely such a one was more fitted to be her exponent than he whose acquaintance with her was of the loosest and most limited kind, and whose respect for her laws was only observed by the desire to sacrifice her to the vitiated tastes of a mercenary public.

Referring to their educational scheme, the President said they must each share the responsibility of pressing forward the movement which had been inaugurated. All interested in the advancement of their art must not regard with satisfied approval any suggestion which fell short of that which would place young students in the best possible position, so that they might become worthy professors of an art which Ruskin placed in the first order as the

mother of all other art—when he said at the close of one of his works: "I say Architecture and all Art; for I believe architecture must be the beginning of Arts, and that the others must follow her in her time and order; and I think the prosperity of our Schools of Painting and Sculpture, in which no one will deny the life, though many the health, depends upon that of our Architecture. I think that all will languish until that takes the lead, and—this I do not think, but I proclaim, as confidently as I would assert the necessity, for the safety of society, of an understood and strongly administered legal government—our architecture will languish, and that in the very dust, until the first principles of common sense are manfully obeyed."

#### DUNDEE: ANNUAL CONVERSAZIONE.

On the 17th inst., at the annual conversazione of the Dundee Institute of Architecture, Science, and Art, Mr. William Mackison, in the course of his Presidential Address, commented on the Architectural Provinces scheme,\* and observed that in the event of centres being established in Aberdeen and Edinburgh, which would be hailed with satisfaction, the northern and southern provinces would be divided. The infusion of a representation of the Allied Societies into the Council of the Royal Institute would, he thought, do much to enliven and refresh its life work and bring it more into touch with the wants of the provinces. The Council of the Dundee Institute intended to have fewer lectures this season, and, by way of experiment, to interject a social meeting into the course. Opportunities would also be given for visiting various works of a practical nature in the neighbourhood. These would take the place of the lectures omitted, and would not interfere with the excursions which were so highly prized.

#### LEEDS AND YORKSHIRE: OPENING MEETING.

On the 20th inst., at the opening meeting of the session of the Leeds and Yorkshire Architectural Society, the President, Mr. G. Bertram Bulmer, commenced his Address by remarking upon the better feeling which existed among their practising members and the steadily increasing ardour of their students. It was most gratifying to feel that this change had been brought about by their Society, which was established eighteen years ago for "the promotion of honourable practice" and "the education of their pupils." He would impress upon the members the urgency of keeping ever in front of them that twofold character of their constitution. If a student of architecture wished to practise as a professional adviser, he must take his fee and therewith be content, otherwise bribery and corruption would enter in. It was for the public to see that a sufficient *quid pro quo* was offered for services confidential and skilful; and for the architect to see that his fee was sufficient, so that there might be no possible excuse for accepting commission from other than his client. That was the law of the Royal Institute of British Architects, and it must be as that of the Medes and Persians, which changeth not. . . . There was plenty of opportunity for honourable practice, and it was for their Society to show the way, and foster the principle of "Architecture, a Profession and an Art." One form of honourable practice he would commend as a sacred duty—the preservation of that etiquette which should compel members of any society to observe both the spirit and the letter of its laws. Unless they were prepared to do this, they were "wolves in sheep's clothing," and had no right to be within the fold. One of their members during the present year had fallen away from their principles, and was no longer within their ranks, having made a determined effort to out-distance his brother competitors in a competition, by disclosing the authorship of his design to the judges, thereby preventing his brethren from obtain-

ing the unbiased award to which they were entitled. The Royal Institute had done a good deal in late years to improve the purity of "competitions" as emanating from promoters, and he (Mr. Bulmer) sincerely trusted that all the Provincial Societies would join with the Royal Institute in controlling any irregular proceedings on the part of members. . . . The Architectural Provinces scheme\* of the parent body, which had been formulated primarily for educational purposes, would also be advantageous in other directions, for through the Allied Societies the Institute would be able to regulate more stringently the practice of its members, and circulate for consideration any proposed reforms for increasing its own efficiency. As regarded the main object of the scheme, Mr. Bulmer said he could not but believe that the Royal Institute, having established compulsory examination, and divided the country into educational districts, would complete the machinery by forming a system of educational classes, with certified instructors, in the various parts of the country where students congregated most. . . . Mr. Bulmer referred to the "smoke nuisance" of their city as a problem of which architects should attempt the solution. The domestic fireplace and business chimney, which were frequently erected from their designs, should be smoke-consuming as far as modern knowledge would allow. . . . It was essential in all new buildings that this point be carefully studied. He would suggest that every smoke-flue in a house should be connected with one shaft, where the smoke could be dealt with scientifically. . . . With all these things, however, they must not forget that the end and aim of all true architects was Art—to be able to endow the building, after its practical requirements had been met, with form, proportion, colour, and refined and chaste adornment. To do this well was no easy matter, and the student would find that the cultivation of hand, eye, and brain power required to develop his aesthetic gifts would tax his strength; that his Art studies must begin when he decides to devote himself to architecture, and that they would be far from complete should he exceed in years the "allotted span." . . . As to the oft-repeated cry for novelty, which induced the facile practitioner to attempt designs in every known style under the sun, it was a rock on which many crafts had been wrecked, and he would advise their avoidance of it in the future. If every practitioner had one style of his own, there would be variety enough and to spare. The Gothic Art of England was developed from the Norman work through several periods lasting nearly five hundred years, undisturbed by reference to any other style. In the present day they originated, or thought they originated, a style, worked it hard for a twelvemonth, and then attended with pleasure its funeral obsequies. . . . More attention to truth of construction must be insisted on. Many years ago Pugin laid down his "true principles," and but yesterday he (Mr. Bulmer) saw, to his great astonishment, a workman carry into a large building, on his back, the marble columns supposed to support the roof! His astonishment vanished, however, when he discovered they were made of a kind of wicker-work, covered with a patent scagliola! This was a very gross perversion of the truth, and a witness that sham architecture was still to be found among them. There were cases in which the truth was not so easy to diagnose; hence the necessity to study and cultivate the principle, which, when once adopted, would give an added interest to their work, and a keynote they should never fail to follow. Architectural Art was not a mere trick of the pencil, but must be based on sound principles, which were the expression of a logical reasoning faculty. In erecting a building of importance, the work of many crafts had to be introduced, and it was the duty of the architect to secure, as far as possible, complete harmony among these by designing all the details himself in

\* See page 4 ante.

every trade, or by exercising a power of selection which could only be arrived at by long and severe training, else his work would become a museum of crafts, and not a homogeneous work of Art.

## PARLIAMENTARY

### Sanitary Registration Bill 1893.

The object of this Bill is to provide for the sanitary registration of dwelling-houses, schools, hospitals, &c.; and for this purpose the authorities charged with the administration of the Public Health Acts are to be constituted "sanitary registration authorities" for their respective districts, with power to appoint an officer, to be styled a "sanitary registrar," who shall, under their direction, issue notices in the terms stated in a schedule to the Bill, keep a record of the same, and make returns to the Local Government Board. A notice is proposed to be sent to the owner or occupier of every building, informing him of the provisions of the Act, and such owner, &c., may deposit with the sanitary registration authority a "sanitary certificate," signed by a "licentiate in sanitary practice," who must be licensed in accordance with the Act. Such licences are to be issued by the Local Government Board to members of the Royal Institute of British Architects, the Royal Institute of the Architects of Ireland, the Incorporated Association of Municipal and Sanitary Engineers and Surveyors, and the Surveyors' Institution, who are to be registered as qualified in sanitary practice; and to various other "qualified" persons. Licences are to be granted without fee to the members of the Institutions above mentioned; but in other cases a fee of five guineas is to be charged, and the authorities are to keep a register of licences issued by them. The Institutions mentioned are empowered to issue "certificates of competency in sanitary practice" to any of their members who have proved themselves qualified by examination to design and carry out constructive sanitary works, and duplicates of such certificates must be deposited with the Local Government Board. A sanitary certificate is not to be given for any building when the arrangements are not strictly in conformity with the requirements as set out in the Bill. After a date to be fixed, no building shall be used for occupation unless a sanitary certificate has been deposited with the sanitary registration authority; and after a later date no building is to be let or occupied for any purpose until the sanitary arrangements have been certified and registered. A person certifying the sanitary condition of a building is to be deemed to have examined the arrangements certified; and the wilfully signing a false certificate is to be punishable as a misdemeanour. A penalty is imposed for letting or occupying an uncertified building. Sanitary certificates, or sanitary registration certificates, are to lapse five years after the date of issue, and in the case of alterations affecting the sanitary arrangements; in such cases the existing certificates are to be indorsed or new ones obtained. The sanitary registration authority is to decide within its own area as to the purpose for which buildings are being used; but the owner or occupier, &c., is to have a right of appeal to a magistrate, whose decision is to be subject to appeal to the Local Government Board. Lessees or occupiers whose lease, &c., has less than seven years to run at the passing of the Act, are to be exempt from the penalties therein imposed. The engineer or surveyor of a local authority is to undertake, on the written request only of the owner or occupier, to certify the sanitary condition of a building, at a fee to be approved by the local authority. The Bill, when it becomes an Act, is not to be construed to interfere with the Public Health Acts, or with any powers which local authorities may possess under other Acts.

The draft of the Bill, having been brought before the Council of the Institute, was referred to the Science Stand-

ing Committee for consideration and report, and the latter's report was submitted on the 20th inst., when it was ordered to be printed in the *JOURNAL* prior to its consideration by the Council. The report is as follows:

Your Committee have carefully considered the above Bill, and are of opinion that it is (1) based upon erroneous premises, is (2) a wholly unnecessary measure, and (3) would utterly fail to secure the objects which the promoters of it seem to have in view.

1. That it is based upon erroneous premises is evident from the *third* clause, which, in view of the words, "and" "in every place where there may be no local authority" "under the Public Health Acts, or where there may" "be more than one local authority under the said Acts" (lines 11-13, page 1), seems to imply that there are places which have no sanitary authority responsible for health conditions, and that there are places where those conditions are controlled by more than one authority.

So far as England and Wales are concerned, this is certainly not the case. Under the provisions of the Public Health Act 1875 every part of the country is placed under the responsible control of a sanitary authority, and any such sanitary authority, so far as *urban* districts are concerned, is authorised by that Act to exercise full control, not only over the construction and sanitary arrangements of buildings, but the closing of any building, or part of any building, which, owing to defective sanitary condition, is unfit for human habitation; and, so far as every *rural* district is concerned, the sanitary authority responsible for its health conditions can obtain the same powers of controlling the construction and sanitary arrangements of buildings and the closing of buildings unfit for human habitation as are given by the Act to every urban sanitary authority, and the Acts are perfectly clear as to every district being under the control of *one* sanitary authority only.

2. The Bill is unnecessary, since the Public Health Acts enable every sanitary authority to make and enforce by-laws upon all matters pertaining to health in regard to buildings, and under those Acts the following by-law relating to the certification by an officer of the sanitary authority of any new building as fit for human habitation before it is let or occupied has been largely adopted:—

"A person shall not let or occupy any new dwelling house until the drainage thereof shall have been made and completed, nor until such dwelling house shall, after examination, have been certified by an officer of the sanitary authority, authorised to give such certificate, to be, in his opinion, in every respect fit for human habitation."

Moreover, so far as many of the buildings mentioned in the 6th section of the Bill are concerned, they are already under constant supervision and inspection by public officers responsible directly to some Department of Government, which in its turn is responsible to the Legislature.

As regards the metropolis, it must be borne in mind that the Public Health Act 1875 does not apply to it, and that, although the recent Public Health Act (London) of 1891 has largely extended the powers of sanitary authorities in the metropolis, the whole subject of the sanitation of buildings in the London area is in a transition state, while the contemplated legislation in regard to it takes a far wider and more effectual view of the subject than is proposed in the Bill.

3. That it would fail to secure the objects intended follows from the fact that, while adequate power already exists for securing the proper sanitary construction of new buildings, the closing of existing buildings unfit for human habitation, and the certification by *responsible* public officers of buildings as fit for human habitation, the Bill proposes to place this important duty of certification in persons having no other responsibility than that of their own personal reputation, and who may be wholly inex-

perienced, although possessed of sufficient general knowledge of the subject to satisfy five or more examiners of the governing bodies referred to. There is, therefore, strong reason for supposing that the provisions of the Bill, if it were passed, would bring about conflict with the responsible sanitary authorities.

These objections to the Bill apply throughout the country under the operation of the Public Health Act 1875 and amending Acts, and your Committee believe these objections equally apply to the rest of the United Kingdom, where corresponding legislative enactments are actually in operation.

The Bill is defective and objectionable in other respects; for example, Section 10 prescribes certain arrangements (all of which practically, be it noted, can already be required by existing enactments) which are to be secured in every house before a certificate is given; but it will be obvious, in reference to the five sub-clauses of this section, that the matters dealt with do not by any means cover the whole of the conditions requisite to secure wholesomeness in a building, *e.g.* such matters as a damp-proof course in the walls of the building, undrained sites liable to extreme wetness of subsoil, lack of air-space about the dwelling. Hence it would be possible for a house to be certified under the Bill, though such buildings ought to be condemned by the local sanitary authority as not complying with the requirements which by law they are authorised to enforce.

The qualifications provided in the Bill as necessary for enabling persons to become Licentiates in Sanitary Practice afford no guarantee that persons unsuited for such duties will not obtain licenses, and no arrangement is made by which a person once licensed can be deprived of his authority to issue sanitary certificates.

Your Committee are satisfied that the proposal to set up an independent body of certifiers is altogether out of harmony with recent sanitary legislation, the tendency of which is to impose such duties on the responsible local authorities.

Your Committee are fully acquainted with the fact that in very many instances the existing powers are said to fail to secure the desired end, but they are of opinion that this is not due to the inadequacy of existing powers, but rather to the failure of the sanitary authorities to put those powers into force—a failure which your Committee are satisfied is due, in a great measure, to the insufficient weight of public opinion consequent upon the ignorance of the public and their indifference to the subject.

For the reasons above set forth your Committee are of opinion that the Royal Institute of British Architects should enter an earnest protest against the Bill.—ERNEST TURNER (Chairman of the Sub-Committee); MAX CLARKE; GEO. PRYCE CUSXON. 1st November 1893.

## LEGAL.

### New Street—Height of Buildings.

LONDON COUNTY COUNCIL v. LAWRENCE AND SONS.

The defendants in this case, Messrs. Lawrence & Sons, were summoned by the plaintiffs, the London County Council, for having erected a building on the side of Kensington Court, a new street of less than fifty feet in width, which exceeded in height the distance from the front of the building to the opposite side of the street, without the written consent of the County Council as required by Section 85 of the Metropolis Management Amendment Act 1862 (25 & 26 Vict. c. 102). That section provides that no building, except a church or a chapel, shall be erected on the side of any new street of a less width than fifty feet which shall exceed in height the distance from the external wall or front of such building to the opposite side of such street without the consent in writing of the Metropolitan Board of Works; nor shall the height of any building so erected be at any time subsequently increased so as to

exceed such distance without such consent; and in determining the height of such building the measurement shall be taken from the level of the centre of the street immediately opposite the building up to the parapet of such building. The case came on for hearing before Mr. Curtis Bennett at the West London Police Court, and it was proved that Kensington Court was of less width than fifty feet, and that the height of the defendants' building, as measured from the level of the centre of the street immediately opposite the building to the parapet or eaves of the building, was over seventy-four feet, and that the distance from the external wall of the building to the opposite side of the street was forty-five feet. The front of the building was in Kensington Road, and the entrance to it was from that road; there was a small entrance from the area at the side of the building in Kensington Court, but with that exception there was no entrance except from Kensington Road. Kensington Court was a new street within the meaning of the Act; Kensington Road was not a new street. The defendants contended that the building was situate in Kensington Road, and not in Kensington Court; and that it was not erected on the side of Kensington Court within the meaning of Section 85 of the Act.

Mr. Curtis Bennett decided in favour of the builders, holding that, although the side of the building abutted on Kensington Court, the building was not erected on the side of Kensington Court within the section. Accordingly he dismissed the summons, with costs; but stated a case for the opinion of the High Court, before whom the question came on the 19th June last. Mr. Avory and Mr. Finlay, Q.C., appeared for the County Council; and Mr. Dickens, Q.C., and Mr. T. Willes Chitty, for Messrs. Lawrence & Sons.

The judgment of the Court was delivered by Mr. Justice Mathew, who said that it appeared to him that when the language of the 85th section was carefully looked at, there was no escape for the respondents. The building in question was a corner house, erected fronting the Kensington Road, but with an external wall in Kensington Court; and the question was whether the provisions of the 85th section had been violated because the side of the building in Kensington Court had been carried to a height exceeding the width of that street without the appellants' consent having been obtained. The respondents, Messrs. Lawrence and Sons, contended that the house could not be said to be erected on the side of Kensington Court, because its main frontage was in Kensington Road, but he (Mr. Justice Mathew) could not agree with that contention. If the word used had been "situate" and not "erected," some sort of argument might have been made on behalf of the respondents; but the language used was quite plain, and it seemed equally plain that the respondents had brought themselves within the provisions of the section. The magistrate was therefore wrong, and the case must be remitted to him for further consideration.

The case came on for rehearing before Mr. Curtis Bennett on the 25th ult., when Mr. Dickens, Q.C., for the defendants, asked the magistrate to inflict a nominal penalty, as a purely technical offence only had been committed, and one which did not affect public rights. He pointed out that it was not until the roof was on in October 1892 that the County Council served a summons, nothing having been done from the April before up to that time. If two storeys had to be taken down, it would entail a loss of £1,500 a year, though the heavy ground-rent would remain the same.

The magistrate said this was the first case under the new section, and the Court had held that the buildings had been wrongly erected; therefore there must be a substantial fine. It was hard law, and he wished the County Council to understand that he considered the smallest coin in the realm would be amply sufficient in any future proceedings against the defendants.

A penalty of 60s. was imposed, with five guineas costs.



